

The TAPin electronic libraries project and the experience at the University of Birmingham

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Abstract

The TAPin Project and its implementation at the University of Birmingham is described. Local issues and key features of a hybrid approach to Networked Learner Support are addressed. The methods of NLS adopted included electronic mail and the Internet. The key role in NLS played by subject librarians is stressed. Transfer of skills to learners by means of targeted individual training and a web guide is discussed.

Introduction

The University of Birmingham became involved with the Training and Awareness Programme in Networks (TAPin) Project in 1995. The project, funded through the HEFCE Electronic Libraries programme(1), aims to

"establish models for the effective transfer of skills in utilising networked resources"(2)

It aims to change the Information Technology culture within the academic community by strengthening internal support roles for both librarians and academic staff. From this position of shared knowledge and combined strengths, TAPin will deliver effective and carefully targeted training and support by

"... enhancing the expertise of academic staff in the appropriate exploitation of networked information resources" (3)

As the expertise of academic staff member increase, this will have a positive effect on the IT culture of the institution. Further, if the expertise is to be maintained, internal support needs to take account of the technologies under scrutiny. Full details of the TAPin project have been reported elsewhere(4). This paper focuses on the implementation of the TAPin Model at the University of Birmingham and addresses some of the issues surrounding support for the technologies. One of the strengths of TAPin was its "focused, local and practical" approach to developing and adapting methods of support for the effective transfer of skills. The focus on local implementation allowed the TAPin team at Birmingham to develop mechanisms of support and training (online and others) which could take account of local circumstances.

The recent development of networked technology into the educational environment has prompted a re-examination of the support for, and support of, training. Subject librarians have always played a key role in providing this support and training for information retrieval. This traditional role can perhaps best be seen as re-active. With the increase in IT, subject librarians are able to become more pro-active using the networked technology available. This key role builds on, and extends, the approach endorsed by Follet(5) and Fielden(6). By taking a leading role in supporting emerging technologies, subject librarians act as significant cultural change agents in the educational environment they are part of.

In adopting the TAPin model to the local environment, it became apparent that Networked Learner Support(7) is an integral feature of this approach. The Support mechanisms formed a hybrid approach using both new and existing technologies. In order to understand the support mechanisms provided, it is necessary to provide some detail about

the institution of the University of Birmingham and the local environment in which it operates.

The University of Birmingham

The University of Birmingham was founded by a Royal Charter granted in 1900. There are 32 Schools which are divided into 7 Faculties. It has over 15000 full time students and over 1300 staff. Networked services form part of the remit for Information Services.

Information Services at the University of Birmingham

Information Services at the University was established in October 1995 in order to "integrate the planning, management and delivery of academic information services to support the teaching, learning and research on campus"(8). The convergence into Information Services of the University Library, Academic Computing, Television and Film Services, together with the Centre for Computer Based Learning strengthened the provision of Information Services on campus and saw networked access to the new technologies put high on the agenda. The libraries of Information Services comprise 10 libraries with the Main Library and the Education site Library housing the education stock.

Following the convergence a new Learning and Research Support Division was established. The Division brings together staff from a range of information, computing and media backgrounds and skills to "deliver support for teaching, learning and research"(9). The division is organised into four discipline based teams including Commerce and Social Science, Education and Law. LRS is positioned to support both open and resource based modes of study using IT and networked information resources. This local power base of combined skills and shared knowledge of networked resources was in its infancy when the University joined the TAPin project.

The Information and Computing Systems Division manages and develops the University's network and other central and distributed computing facilities. A modern High Speed Campus Network (HSCN) network management station was recently installed to facilitate networked access on campus and this network (HSCN) is connected to the academic network, SuperJANET. Although there is no agreed ongoing HSCN investment strategy to ensure the continued use of the infrastructure, a draft strategy is in progress.

The reorganised management and service structures allows Information Services to be responsive (and hence proactive) to the changing academic shape of the University. The infrastructure helps to promote networked support and ensured a good reception for the TAPin Project.

The TAPin project at the University of Birmingham

The University of Birmingham participated in two of the four subject areas targeted for the TAPin project - Education and Life Sciences. For the purposes of this paper, the approach adopted is described for implementation within the Education subject area. All the librarians involved in TAPin at the University contributed to the development of the model and helped pull together the networked learner support delivery mechanisms.

The School of Education

The Education subject area at the University of Birmingham forms part of the School of Education in the Faculty of Education and Continuing Studies. The School offers research degrees, initial teacher education and professional development of teachers and others engaged in education.

Research Base

The School has, over two assessment periods, achieved and sustained 5A standing in the RAE (10). It attracts a large number of externally funded research projects and regards itself as firmly in the top three national centres for education research. The strong research base in the School confirmed for the TAPin Trainer (the term used throughout to describe the role of the subject librarian at the University of Birmingham) the importance of support for TAPin members (the term used throughout to describe the academic staff members from the School of Education) if the networked resources were to be exploited to maintain the RAE grade.

Equipment standards

For historical and cultural reasons, the School of Education supports both PC (c89) and Macintosh (c32) machines although not always to the same level. (MAC machines were originally bought by the Distance Education unit when they were a self financing department). This lack of standardisation causes some concern over the level of support. There are also indications that MAC software running on machines is falling behind the PC equivalents. Equivalent software is not necessarily loaded onto every machine within the department. Software is often loaded onto staff machines on request rather than as a matter of course by the IT support Officer in Education. The TAPin Trainer had to work closely with the Computer Officer to ensure appropriate software was loaded. Issues of cross platform support pushed the potential delivery mechanism towards the Internet.

The prevalence of MAC machines made network support even more difficult as the TAPin Trainer had to overcome a steep learning curve with MAC machines before training and the support could be offered.

The TAPin Annual Report had advised TAPin Trainers to target staff who had Internet access and a 486 or pentium processor desktop computer. However, this was not possible or practical in the School of Education with this large number of MAC machines and whose users made up a large percentage of the TAPin sample.

Access to the Library Information Network

Access to a major networked resource available at the University, the Library Information network is not available using a MAC machine. The Library Information Network provides access to around 60 cd-roms and other networked databases but cannot be accessed from the desktops of 35% of academic staff in the School of Education. The scale of need, coupled with the diverse nature of hardware and software available within the School, placed a high demand on the networked support which could be provided.

The Local Approach by the University of Birmingham

The local approach to the implementation of the TAPin model has two parts. First, TAPin trainers set about establishing the who, where and what could be developed in the model. Second, the issue of how training would take place and the networked support which could be provided were examined. The first issue will be dealt with briefly followed by a more in depth examination of how the training was provided and supported.

The Sample

A sample of staff members (20%) within the School of Education at the University, who had taken part in the Initial Questionnaire Survey were identified to take part in the second stage. Staff members who expressed a desire to be trained and those who were generally keen to learn were targeted. All the targeted staff were research active. The model focused on supporting the research activities of TAPin members and bringing them up to speed on network skills. This reinforced the strong research base of the School. Supporting the technology for teaching was not addressed.

A Training schedule was produced to take place on a flexible, informal basis, being held within their own offices, and inviting non-threatening and supportive training. This targeted approach would produce a "core of champions" for networked learning who would, in turn, cascade and transfer networked learning and support throughout the School.

Networked Learner Support

The Training Programme devised covered a range of electronic and printed information sources and can be found in Appendix A. The "Mix and Match" approach was felt essential given the wide range of IT skills, held by TAPin members & identified by the TAPin questionnaires. As a result, several training methods and different levels of support were identified. Only those using the networked technologies will be described here under five headings

- a) Orientation around Information Services

- b) Training and support for networked Online and CD-ROM resources
- c) Training and support for the Internet as a research tool
- d) Training and support for other IT applications
- e) Networked learner support for communication

a) Orientation around Information Services

The recent transfer of the old electronic library guide to the new, updated Web Library Guide(11) coincided with the launch of the TAPin project at the University of Birmingham. The web library guide is a hypertext guide which gives guidance to users on the subjects and services available in the Main Library. Research material held in the Main Library complements the focused collections built up in the Education Library.

This mechanism of delivery support affords the user the ability to improve his or her library skills on an individual basis from the network. The guide is being developed to link to a web study skills project.

b) Training and support for networked Online and CD-ROM resources

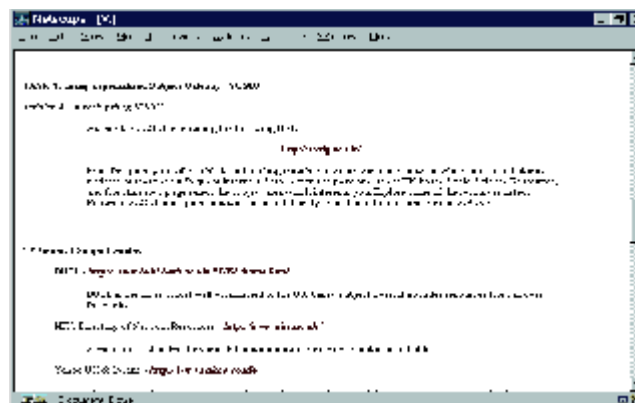
Work booklets on the Web(12)

The first area of support to be developed using online mechanisms was that of publications. Publications are perhaps one of the largest assets Information Services has. The Publications budget within Information Services is around twenty thousand pounds and covers a range of guides and leaflets.

It was felt that publications were a suitable support tool to mount on the web. This gave publications a certain "added value". It also allows MAC and PC users the opportunity to view them because of the cross platform nature of the Internet. Further, it ensured that materials were available "on demand", providing users the opportunity to approach their learning in an incremental way. This "time shift" element was seen as important for TAPin members, allowing users to work at their own pace at a time convenient to them.

However, the established programme has over 100 publications and so it was not possible, nor deemed appropriate, to load them all. The work had to be prioritised. A suite of work booklets, covering a range of networked resources, were produced. The Internet "work booklet" lent itself to be initially launched on the web page, because the worked examples could become live links. An example of the work booklet can be viewed in Figure 1. (The irony of a web guide being on the web was not lost). The booklet described examples using Netscape browser.

Figure 1



The Internet guide was produced using "front page" software and then loaded onto the TAPin Web Page by the Web master. The advantage of loading the guide in HTML format is that it provides user to ability to browse. Also, the pages can be indexed by search engines and gateways. There are plans to mount the work booklets in a portable document format so that they can be printed out to look like their original paper format.

Other work booklets in the suite were loaded but, initially, only as plain text files. This was partly because the services described in the work booklets were not available on the web. Once the booklets were launched on the web (even as plain text) the services described were transferred into the web environment! Support was being offered on a basic level but none the less was there. The work booklets enabled TAPin members to work at their own pace and to refer back to a particular resource.

Production and maintenance costs

Mounting the Guides put the information into the public domain, and shifted the printing costs, to some extent, to the School, and away from the Information Services already heavily committed publications budget. Production and maintenance costs of the work booklets (in print and on the web) was expensive. It took around 40 person hours to produce and mount the guides. Revision was necessary as soon as the guides went live. (The TALIS Library catalogue and the BIDS service are now available on the Web!). Also, the TAPin assistant has had to spend time checking that the booklet links are still active. These costs, together with the time needed to learn new software such as Front Page, were borne by the TAPin project investment.

Not all TAPin members welcomed this move away from supplying hard copy of publications (although in fact printed copies were still available). Printing in the School was not always easy and not all TAPin members had access to their own printers. This was compounded by the fact that several TAPin members worked from home and preferred to make hard copies. Concern was also expressed distance education students (c800) may not be able to take advantage of this support because they did not have access to appropriate equipment. Although online delivery means wider dissemination, this support was not always welcomed.

User Guides loaded onto the Library Information Network

The Library information Network is networked across campus to PC based machines, and provides access to over 60 cd-rom and floppy diskettes databases. To help TAPin members utilise the research potential of the LIN the in-house guides have been made available under the <F1> function keys on the Main Menu as plain text files on the Main Library CD Server. Distribution of the guides in this format ensures that when staff and students access the LIN in the Library or at their desk top, they are able to obtain immediate support for the specific database being searched.

As with printed guides, web guides need to be kept current and accurate. Re-writing the guides, although time consuming, is relatively cheap. Few printing costs are involved. The three key database guides to the education area have also been loaded onto the web on the TAPin pages to alert users to their existence. This is particularly important for the MAC users who do not have direct access to the LIN. Networked support is also provided by the Information and Computing Systems division(13).

c) Training and support for the Internet as a research tool

Training TAPin members to exploit the Internet for research fell into two areas. Members who had little or no knowledge of what the Internet was or members who had difficulty locating appropriate information. Complete novices were guided to the work booklets outlined above to begin their training. Following that, online support was offered through a current awareness service and a elementary gateway.

Individual Current Awareness for TAPin members on the web(14)

Setting up a current awareness service is difficult, and no more so than on the web. TAPin members supplied five key terms to represent their research interests. The key to an effective Current Awareness Service is ensuring that the service is tailored. Obtaining keywords which adequately describe TAPin members interests was more difficult than expected. Several members did not want to commit themselves to only five specific keywords, whilst others offered very broad topics (ie. education, management) without much concern that this would generate too many resources. Information on the opening Current Awareness screen prompts TAPin members to advise if the key words they have supplied need to be updated.

The key terms supplied were then used to search a number of gateways and search engines to locate useful

resources. The resources were then evaluated for relevance and annotated by the TAPin trainer. They were then added to the TAPin members page on the web.

To provide a sense of individuality, password control was added. This entailed TAPin members to enter a password into their own Home page. There has received mixed reactions. Some felt it was yet another "thing" to remember when you are searching whilst others felt it provided them with a sense of privacy to what is, in effect, perhaps their own work. The networked support mechanism was able to inform the research base of the School for TAPin members.

Most searching is conducted once a month, although if resources are located at other times and fit the criteria they are mounted immediately. Using the web as a support tool ensures that the resources identified are current (although this is not always easy to establish). Further, it extends the range of services which can be identified for the TAPin member such as ftp sites or other software.

Throughout the duration of the TAPin project, the Research team at TAPin have supplied details of key educational resources they have located using the electronic mail system and the Internet. This helped in the initial stages once details of the TAPin members interests were provided. Electronic mail was also used by TAPin partners to disseminate information on new resources which could be added to this service.

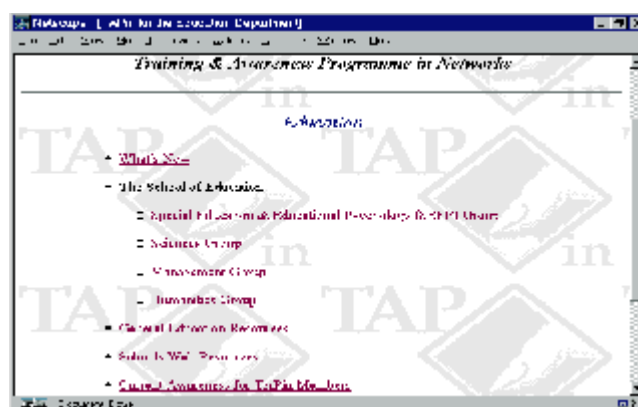
The current awareness service adds value to networked support provided and alerts TAPin members to available networked resources. Support by Information Services for a current awareness service is a new development and its effectiveness yet to be realised.

Elementary Education Gateway(15)

During preparation for the TAPin members Training Programme it became obvious that there is no one single (or obvious) gateway to educational resources. TAPin members are directed towards SOSIG and/or specific Home Pages of other Schools of Education although little was available on the Information Services Home Page and the School of Education have yet to launch their own home page.

The TAPin Trainer set about devising an elementary gateway to educational resources using SOSIG(16) as a model. The Gateway was arranged in broad subject areas corresponding to the four management areas of the School of Education and which were represented by the TAPin members. Resources were located using the same methods as the current awareness service, that is, by searching within a profile of key terms appropriate gateways and search engines. The resources were evaluated using criteria based on relevance, authority of the material and comparability with related sources. The resources were then added to the web page with annotations. The opening page is shown in Figure 2

Figure2



The gateway seeks to inform staff of new sites, subject guides, search engines, discussion lists, FAQ archives, databases and teaching materials which have been mounted on the Internet. For the duration of the Project, the resources are mounted on the TAPin web pages at the University. At present this resource is not searchable.

The TAPin web pages are complemented by the new Information Services Guide(17) which replaces the Library

Home Page. The IS Guide is beginning to provide, amongst other things, a FAQ on reference services. The development of the FAQ offers a simple but effective means of dealing with large volumes of related resource enquiries (see Electronic Enquiry Service). The IS Guide provides support across the divisions of Information Services for all staff and students at the University. There is a link to the main Education Resources on the IS guide from the TAPin pages. Duplication of effort is avoided by the same individual being responsible for the two educational resources on the IS Guide & TAPin.

Skills level

Providing and maintaining the Education Gateway to resources draws upon the TAPin Trainer's subject and technical expertise. This technical expertise was helped by the TAPin project. The Interim Report for TAPin (18) found that librarians were wanting in a number of key areas of networked skills, including loading items onto the Internet. This skills gap had to be addressed before networked support could be offered. TAPin provided a comprehensive training programme receiving contributions from other Elib projects such as Netskills and Edulib (19, 20). This training programme enabled the networked support to be better managed. At the University of Birmingham, professional development of LRS staff is achieved by attendance on courses organised by the Staff Development Unit or other internal training session, many of which are organised through an Awareness Seminars programme. The training for TAPin Trainers and that provided by the University is provided at a cost to both the University (in releasing the TAPin Trainer) and to TAPin. In offering support account needs to be taken of the skills levels of the subject librarians involved.

d) Training and support for other IT applications

Networked Learner Support in sections a) to c) can perhaps best be seen as an extension of the subject librarians traditional role of offering training and support on printed information resources. Developments in IT and the convergence of Information Services has extended the support to cover more generic IT applications. This support is aided by inclusion in the converged Information Services of the Centre for Computer Based Learning. Open Learning offers the potential for enhancing learning for all. Although the Open Learning Menu was not developed for TAPin, the TAPin trainer was able to call upon its support to help more technophobic TAPin members to improve their IT skills.

Open Learning Menu

Information Services has developed an Open Learning System recently launched and added to the Library Information Network. The Menu provides networked support to a range of computer based learning and computer assisted learning packages which includes both in house material and commercially produced packages. The Menu offers access to other IT applications including study skills, a student assessment facility and computer assisted language learning courseware for international students. This type of networked support enables self paced learning over the network. Open Learning ensures that the process of learning encourages greater proficiency in the use of computing and IT skills.

For other areas of IT applications not presently on the Open Learning Menu, or elsewhere, networked learner support was limited. TAPin members are directed to commercial organisations who may provide demonstration discs of the application in question.

e) Networked Learner support for communication

The Networked Learner Support outlined in the implementation of TAPin at Birmingham has described support for specific applications and services to TAPin members. Networked Learner Support goes beyond this. The existing technologies can help facilitate communication between the information professional and academic staff. Communication and support were key elements in the successful implementation of the TAPin model. Email was already in place and is well established within Information Services and across the University. All TAPin members had access, and were users of, electronic mail. The strength it brings to the communication process is implicitly accepted.

Electronic Enquiry Service

The immediacy of support that electronic mail brings was recognised by the TAPin team. TAPin members were encouraged to email the TAPin Trainer with any enquiry they may have to build up an electronic enquiry service. The number of messages increased over time. The TAPin Trainer was able to receive and respond to general enquiries about the networked technology. As the number of messages increase, the TAPin Trainer is using the information to build up a Frequently Asked Questions database for members of the School of Education. This way the information received can be turned into a "knowledge garden" for networked learner support.

The existing infrastructure at the University enables the Electronic Enquiry Service to be effective because Information Services manages all aspects of networking on campus and thus informs the process of support. This infrastructure has also enabled the TAPin Trainer to receive networked support from "experts" within Information services by re-directing electronic mail messages as required.

Current Awareness Service by electronic mail

The Individual tailored pages for TAPin members are complemented by an electronic Current Awareness Service utilising the electronic mail system. In consultation with colleagues in the Collection Development Division, a Current Awareness Service is to be offered to TAPin members for help with the selection of new books for their research. Use is made of the Bookfind CD-ROM and other sources to produce regular listings of newly-published books in their chosen subject areas, including abstracts and contents pages, as well as bibliographic and ordering details. This information will be sent by electronic mail to TAPin members when new updates are secured.

Several TAPin members reported that they preferred this method of support, if only because they used electronic mail daily and were alerted to the mail messages when they appeared. With the Internet access, although the references were of interest, it was felt that this service could be backed up by emails alerting them to the new services which had been loaded. TAPin staff had originally shied away from using email as this would still entail TAPin members having to re-key into the browser the address of the resource which can often be quite long.

"Core of Champions"

There is now a core of staff members in the School of Education who have equipped themselves with the skills and confidence necessary to exploit the networked resources. Informal chats (or networking) with the TAPin members indicate that the "added value" the support brought was welcomed. TAPin members felt more confident in using the technology and utilising the support mechanisms that were available. This core of champions will be able to act as cultural change agents within the School of Education. This cultural change will be documented in the forthcoming Impact study of TAPin. TAPin members also reported informally, that they have helped colleagues understand some of the networked information services available. The intention is that this "core of champions" will increase as networked learning grows.

Networked Learner Support requires a good balance of expertise, drawing on a range IT skills, subject knowledge and technical support. The delivery mechanisms outlined help to aid access to, and effective use of, the technology available to academic staff at the University.

Critical factors in the TAPin Implementation at the University

The provision of networked learner support described was provided within the confines of a Project aiming to support academic staff in utilising networked resources effectively. That Project targeted individual staff members and was able to provide training and resources for the TAPin Trainer. The implementation does, however, highlight several features which are more widely applicable when efforts are given over to networked support including

- the need to develop a profile of skills for subject librarian and the individual learner
- establish standard of equipment which is to be supported
- make time to provide effective support
- build in substantial costs
- make the support and training appropriate to the researchbase

Summary

The methods of support adopted are easily understood and make use of the existing technology, namely electronic mail and the Internet. The flexible nature of the support ensures that support is up to date and can take account of new developments. Barriers to offering support, identified by TAPin, have been addressed including equipment levels and IT skills. The costs involved in supporting the model have yet to be fully realised, although the Impact study on the TAPin project at the end of 1997 will provide feedback on this. It is hoped that this outline of the implementation process of the TAPin model at Birmingham goes some way to informing the process of networked learner support.

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APPENDIX A

TAPin: Training and Awareness in Networks Training Programme - Mix and Match approach

In order to put together a tailored training programme suited to your own training requirements, please check the list below and prioritise those subjects which would be of benefit to you. Feel free to mix and match any of the subject areas.

Subject to be covered	Training could include
Search Techniques	Search Techniques, boolean logic, truncation and proximity searching helping YOU to search more effectively
Databases	
a) Bibliographic	Locating references for YOU using International ERIC, Applied Social Science Index and Abstracts
b) Full Text	Locating full text articles using Business Periodicals OnDisc for YOU
The Internet	Examining Browser software, using bookmarks, general navigation, telnet, gopher, ftp, web pages, urls of use to YOU
Search Engines and Subject Gateways	Showing YOU how to discriminate between search engines, evaluation techniques
JANET	Network services demonstration of BIDS, MIDAS for YOU
Bibliographic Software	Providing basic and advanced details of setting up and using this type of software for YOUR NEEDS
Electronic Journals	Locating range of E-Journals available to YOU
Discussion Lists	How to find out which lists are most appropriate for YOU
Document Delivery	Identifying range of services available to YOU such as Uncover and British Library Inside Information
Printed material	Indexes and abstracts, encyclopedias, handbooks of interest to YOU
Other	Other services YOU need help with

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