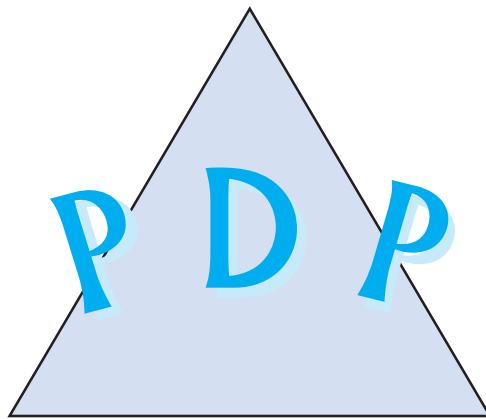


1998-1999



Professional Development Programme

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Foreword

Billy Bonar

Where is the Life we have lost in living?

Where is the wisdom we have lost in knowledge?

Where is the knowledge we have lost in information?

T.S. Eliot *The Rock* (1974)

Eliot might well have added: where is the information we have lost in data? We collect data according to the paradigms and principles which we adapt and adopt. We decide on how that data is to be sifted and organised to yield, in Eliot's terms, information, knowledge and wisdom, which in turn informs our principles, policies and practice. There is nothing new here: computers are merely a means by which the process of informing principle, policy and practice can become more effective, efficient and elegant. Whether computers can also help to answer Eliot's first question is entirely another matter.

In a recent radio programme, I heard an American academic with a book to sell declaring that since computers have been with us for 50 years now, it is time the technology matured. He saw this as having two interrelated aspects. The first is that instead of all the paraphernalia of the multi-function desktop Personal Computer, computers should "disappear" into task specific tools in much the same way as electric motors have done. The second is that computers really ought to be easier to use by now and that the manufacturers have been getting away with poor user design because of the initial infatuation with the new technology. A rich reward awaits the computer designer ready with the truly user-friendly answers when the honeymoon is over. While we contemplate that happy day, however, it is worth recalling that Information and Communication Technology (ICT) is not only about computers and that "Communication", in this context, is emphatically not about machines talking to machines but about *people communicating by means of machines*. Again, there is nothing new here.

The chapters which follow demonstrate that the twin processes of maturation are on-going but that they must be paralleled by planned development of applications and training for professional and clerical staff. Audioconferencing and Videoconferencing combine technologies, including computers, but the technology is inconspicuous and the skills required

for participation are largely adaptations of existing skills. I am old enough to have been conscious of having learned how to communicate by telephone as a young adult. Awkwardness and discomfort disappeared as necessity bred familiarity.

Thus with computers, where familiarity breeds facility. There is nothing here which is too difficult; there is less to be learned than might be supposed and how much is learned depends on what you need or want to know. *Computer* is one of those words which, like *karate*, seems to have that intimidating epithet *expert* permanently attached to it. For too long, the computer illiterate have allowed themselves to be impressed by the most crude computer graphics and dazzled by the most crassly coloured overhead transparencies. The word is out now: computer literacy is infinitely less mysterious and a great deal easier to acquire than the skills of reading and writing. Nevertheless, the clear message for service managers is that *formal training is required*. On the other hand however, if the word you associate with *computer* is *nerd* or *anorak*, it might be useful, in the first instance, to apply your psychological skills introspectively.

At a recent conference held in Glasgow on Social Inclusion and Lifelong Learning, it was reported that the “new skills” required now and in the immediate future are problem-solving, social and communication, team-working and computer skills. It was also emphasised that, whereas all of these develop best through appropriate formal working practices within the organisation, only computing skills development benefits significantly from formal training (Ashton, 1999).

I am therefore pleased to report that the group members developed their own ICT skills over the course of the year through a combination of on-the-job and formal training. The First Class Intranet e-mail system was adopted from the inception of the PDP in 1995-96. As with the previous PDI approach, “[I]t was evident that,.....Psychologists would still require to meet and discuss face to face. However the frequency of meetings would clearly be limited by the distances involved in travelling to a common venue.....Once the project was underway there needed to be a fast, efficient means of keeping communication alive and active. With a geographically scattered group, e-mail seemed the most effective and efficient means of achieving this.” (Liddle, Kerr and Walker, 1996). One of the initial objectives of the group was to report on the use of First Class both across the current PDP themes and more generally across Scotland now that, thanks mainly to the PDP, 85% of Psychological Services have access (see *ASPEP Survey*). Unfortunately, the First Class administrator was unable to provide the necessary statistics, for technical reasons, of

course! Nevertheless, although one group did experience difficulties, both the ICT and the Critical Incidents groups made extensive, frequent use of First Class to make arrangements, discuss ideas and difficulties, canvas opinions, swap information and transmit documents. This almost entirely removed the need to send letters and make telephone calls and fulfilled all of these purposes more effectively and efficiently.

Videoconferencing was used by the ICT group on two occasions to enable Jim Kane to join group meetings from Shetland, or *vice versa* depending on your point of view! About half-way through the second videoconference, we were beginning to realise what behaviours are most appropriate and Jim was able to comment on the process to the benefit of all. Nicola Smith, Agnes Neilan and Elizabeth Hannah made use of three-way audioconferencing to facilitate collaboration on the chapters on SCETWorks and Lotus Notes.

On the formal training side, most of the group took part in a two-day training on the SCETWorks Management Information System (MIS) which was valuable not only in terms of the specifics of that particular MIS, but also in enabling group members to broaden and deepen their understanding of MIS in general. Nicola Smith and Agnes Neilan also experienced a day-long training in and demonstration of Lotus Notes. Finally, Barry Syme has offered the rest of the group a day-long training in designing and delivering professional presentations using the Power Point software package.

It goes without saying, of course, that each group member and the coordinator practised and developed new word processing and general computing skills in the course of preparing this report. The aim throughout the report has been to dispel mystification by clearly explaining jargon, processes and applications and by providing aids to accessing and using ICT in ways which will be demonstrably helpful both to individual Psychologists and in wider service delivery.

The first four chapters deal with MIS, both generally and specifically. Clare McGorry (with some additional material from Jim Kane) in *Applications of ICT and MIS in Psychological Services*, explains what an MIS is and what it does, while placing the concept in the context of current SOEID policy and advice. She goes on to describe both potential and actual applications to the work of Psychological Services. Two of the initial aims of the group had been to create a generic specification for an MIS for Psychological Services in Scotland and to create a demonstration model of an MIS consistent with this generic specification. For reasons explained by Barry Syme in *Selecting an MIS*, this proved neither possible nor

desirable but the *MIS Evaluation Checklist (Appendix A)*, developed by Barry Syme and trialled by Agnes Neilan and Nicola Smith in evaluating Lotus Notes and SCETWorks, will prove an invaluable tool for Psychological Services considering means of meeting their service planning and delivery needs through ICT. *SCETWorks* and *Lotus Notes*, the two MIS reviewed by Agnes Neilan and Nicola Smith in collaboration with Beth Hannah, are just two examples of a wide range of available systems. Their presence in this report does not imply any superiority of these two systems over any others and should not be read as an endorsement of either. Other MIS already in use with Psychological Services, such as Phoenix and the FileMaker Pro system developed for use by services in former Strathclyde Region, might also have been considered. These two chapters illustrate the usefulness of the *MIS Evaluation Checklist* while providing informative, evaluative descriptions of the respective systems.

The ASPEP Survey conducted by Elizabeth Hannah and Jim Kane, provides a *qualitative* snapshot of the views of service managers on the use of ICT and a *quantitative* picture of the level of access to hardware, software and training for both Psychologists and clerical staff throughout Scotland.

In *The Internet and Electronic Mail*, Barry Syme provides a clear, full explanation of these two developments as well as straightforward, practical advice on matters such as software and hardware requirements and what to consider when choosing an Internet Service Provider. He also explores a number of issues in relation to security and confidentiality and explains how both can be built in to any system. Again, he ends by emphasising the need for training in the skills required to access the Internet and e-mail and makes some suggestions as to how this might be provided. The practical utility of this chapter is enhanced by *Appendix C*, which consists of an extensive list of *Internet Sites for Educational Psychologists* compiled by Clare McGorry.

Another electronic source of information, which is specifically designed for Educational Psychologists, is described in use by means of Nicola Smith's *EPNET User Survey*. EPNET is an Intranet system, similar to First Class, which was established for use by Psychologists in England and Wales. As the chapter points out, First Class offers some advantages over EPNET and could develop to provide the same functions which EPNET currently carries out, without the attendant drawbacks. Nevertheless, it may well be worthwhile registering with EPNET in order to establish useful contacts with colleagues in other parts of the U.K. and *Appendix D* provides the necessary information to do this.

As part of the effort to meet the aim of increasing opportunities for access to ICT for Psychologists, Keith Wood and three of his colleagues in Edinburgh City Psychological Services, trialled two commercially available voice activated software packages. The frustratingly disappointing results are entertainingly reported by Keith Wood in *The Use of Voice Activated Computer Systems by Psychological Services*. This represents the undeniably difficult side of ICT. Voice activated systems are supposed to obviate the need for keyboarding skills which are more advanced than the left-right index finger jab. Instead, at least on the evidence of these trials, they produce results reminiscent of *The Computer's First Christmas Card*.

m e r r y m e r r y
m e r r y C h r i s
a m m e r r y a s a
C h r i s m e r r y
a s M E R R Y C H R

Y S A N T H E M U M Edwin Morgan (1985)

In the final two chapters, Elizabeth Hannah and Jim Kane describe and explore the practical issues, techniques and applications of the related communications media, *Audioconferencing* and *Videoconferencing*. Both are already in extensive use in a small number of Psychological Services (see *ASPEP Survey*) and they offer increasing benefits both as participants become habituated to the technology and as the technology itself improves. There are obvious applications in those services which cover wide geographical areas, but this technology can also offer consultation and training opportunities across services.

Appendix F provides a list of the participants in the ICT group with current addresses, telephone and fax numbers. Each can also be contacted via First Class (see the First Class Directory on-line) or through their First Class electronic mail box via the Internet by means of the e-mail address given. *Please make direct contact with the participants if you would like further information on their chapters.*

The unspoken assumption which runs through this document is that the age of electronic communication arrived before this century began and is here for as long as it matters to all of us. It has not and will not make books (or bookshops) redundant and it will not bring the paperless office. Given a reasonable willingness to learn new skills and adapt existing ones as well as formal training opportunities, ICT will increasingly enhance the work of

Psychological Services. Indeed, in the light of Best Value, ICT has become indispensable to ensuring quality service delivery.

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Applications of Information Communication Technology and Management Information Systems in Psychological Services

Clare McGorry (additional material: Jim Kane)

What is a Management Information System (MIS)

Managing information to succeed

All organisations, regardless of what business they are in, process two things: product and information. In organisations whose purpose it is to provide a service, such as a Council Psychological Service, success, for individuals as well as for the organisation, requires the knowledge and skills to manage information effectively. The key purpose of an MIS is to apply Information and Communication Technology (ICT) to help people and organisations perform better. In essence, organisations use MIS to achieve competitive advantage through the intelligent application of ICT, including computer hardware and software. The prime objective of MIS is to ensure that the right information is delivered in the right form to the right people at the right time.

In formal terms, an MIS is the routine processing of data according to a formal set of prescribed procedures. An MIS produces information for managers periodically, or when some condition triggers an exception report. An example of the latter might be when the number of “ADHD” referrals rises above a preset level. Most sales forecasting, production, stock-control and personnel planning systems are examples of MIS’s

Traditional MIS’s had assumptions that all objects and procedures can be defined precisely and formally, that the information required and the reporting periods selected are *always* relevant and that there is only one possible future world.

In order to address these weaknesses, more recent versions of MIS’s known as Decision Support Systems (DSS’s) have been developed in recognition that:-

- ▣ the same information is not always wanted, as problems and people vary
- ▣ problems do not always arise in a way to suit the periodic cycles of planning and control
- ▣ people’s ideas evolve and they want to explore alternatives and ask “*what if?*”

questions

In essence, this chapter is about the exploration of how service planning can deploy MIS databases and points the way towards utilisation of appropriate DSS/MIS software.

Demonstrating best value

As a result of the Government's Best Value process, it is now incumbent on every council Psychological Service to operate within the following four agreed principles

- ▣ accountability
- ▣ transparency
- ▣ continuous improvement
- ▣ shared ownership

In order to do so effectively, new approaches to gathering data will be required, as well as optimum use of resources, and the development of new arrangements and processes (SOEID 1997).

A cultural transformation

Local Government Association (1998) has as its stated intention that the principles of Best Value, in particular the principle of *continuous improvement*, will be achieved through a cultural transformation which will reach every service in every service area in every council by ensuring that experiences can be shared and performances compared:

'Best Value demands a cultural transformation in local government. It requires a positive commitment from members and officers to build a culture of public accountability and continuous improvement.' (LGA 1998)

Facilitating culture shift in psychological services

A key component of the development of Psychological Services is the extent to which the management context facilitates the contribution of Psychological Services to council developments which impact on schools and on the population systemically. ICT has been identified as an important variable in this process (ASPEP, 1998).

Key characteristics of quality service delivery

There is currently significant variation amongst Psychological Services within Scotland in

terms of process and content of quality service delivery. Common minimum standards of process in service delivery will include:

- ▣ predictable responsiveness
- ▣ systematic audit of accessibility, responsiveness of communication, satisfaction and outcome effectiveness with consumers
- ▣ a problem-solving, hypothesis-testing methodology which relates to bodies of evidence

The availability of an effective MIS can significantly enhance the development and monitoring of these minimum standards.

Her Majesty's Inspectorate review of psychological services

A shared challenge for Education Authorities and Psychological Services includes the fact that levels of ICT should be such as to enable Psychologists to carry out their work to a high standard and should be upgraded as required. In addition, more effective use should be made of Psychological Services in the application to practice of research and development (SOEID, 1997).

Volume of Information

All Psychological Services hold information on a large number of current and discharged cases. The traditional method of storing this information was on an alphabetical or coded card index system which resulted in laborious manual searches each time information was required.

Towards effective management of referral information

By storing the same information electronically on an MIS, records are maintained in such a way that specific information can be found, sorted and presented in one operation. In addition, calculations can be carried out and information summarised and incorporated into a report in a process which typically takes less than half a minute to complete. By entering particular items of information, such as a year of birth, it is possible to search an MIS of over 5,000 names in a few seconds in order to locate a client's record. The use of an MIS within one Psychological Service allowed answers to be obtained to the following questions in less than five minutes, compared with several hours for the same process carried out manually:

- ▣ How many cases were referred by medical agencies in the past year?

- ❑ How many current cases are males under the age of five years?
- ❑ What is the ratio of males to females in specialist provision?
- ❑ How many females in primary schools have visual impairment?
- ❑ How many pupils have been referred from the primary sector in the past five years?
- ❑ At what age are most referrals made?
- ❑ How many referrals from each post code area?
- ❑ How many referrals from each sector?

Adding value to the work of the council

A defining feature of a council Psychological Service is its obligation to not only assess the needs of the individual, but also to support the council in making effective and efficient provision for all children and young people. The following applications of an MIS within one Psychological Service demonstrate the extent to which the Psychological Service can contribute at a strategic level to realise the stated aims of the council.

Review management system

EPSEN (SOEID 1994) outlines the requirement for annual school reviews as well as more formal school reviews of the Record of Needs at key stages in a pupil's education. There is also a statutory requirement for a Future Needs Assessment and Future Needs Reviews as well as a Leavers Review. In addition to the difficulty of holding reviews, further demands are made of the school administration as parents and various professionals have to be contacted in advance by letter, and records of the meetings have to be taken. In a large special school this can become a cumbersome task for the Head Teacher and the Senior Management Team. There are also implications for the Educational Psychologist as reviews or meetings may be called at short notice leading to insufficient time to see the client prior to the meeting date. In order to meet these needs, the Review Management System was designed to assist the school in monitoring all statutory reviews for Recorded pupils. This is a functional MIS which eases administration, saves time and allows greater overall control for the Head Teacher. As the information is stored on an MIS, it allows the school to search for specific items of data. For example :

- ❑ How many/which pupils require a review between 2 specific dates?
- ❑ How many/which pupils have not been reviewed within the past 2 years?
- ❑ How many/which pupils will require an FNA by the end of this session?
- ❑ Which pupils come from a certain post code area?

In essence, the Review Management System allows the school to identify in advance the

review requirements for a school session and, in turn, allows for greater planning time.

Behaviour support and exclusions monitoring database

As part of the 1997-98 Professional Development Programme, an exclusions working group required a demonstration MIS to assist schools in auditing behaviour difficulties and exclusions. This led to the development of the Behaviour Support and Exclusion Monitoring Database. Key features of the database include :

- ▣ fields which allow storage of a wide variety of information ranging from the type of social work involvement to measures of social deprivation.
- ▣ behavioural incidents can be recorded specifying in which class they occurred.
- ▣ incidents leading to exclusions can be audited by class allowing the school to identify in which subject departments they are occurring.
- ▣ the facility for the school to monitor the pattern of exclusions, for example, is there a gradual build up in the number of days or are some pupils excluded for longer periods on the first or second occasion?
- ▣ intervention and support strategies are recorded.
- ▣ it is possible to analyse the behaviour of an individual pupil over a number of exclusions as well as search for any particular type of behavioural incident across the school.

Managing the record of needs process

This package was developed in 1995 and allows the user to carry out the administrative functions to initiate a Record of Needs as well as prepare a Draft Record. The package also incorporates a secondary database of statements termed "*Statement Banks*", which assist the Psychologist in completing various parts of the Record, thus saving valuable time. An SEN3/ Psychologist's report *pro forma* is also included in the package. The resulting reduction in the administrative time spent by both Psychologists and clerical staff has led to more efficient and effective service delivery.

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Selecting a Management Information System

Barry Syme

Part of the remit of this project was to create a generic specification for an MIS for Psychological Services in Scotland, as well as attempt to create a demonstration model consistent with these specifications. Initially this seemed a clear and simple task, however there were significant practical difficulties that prevented completion. There are a number of issues which have to be considered: -

- ❑ There is a wide variation in current usage of Information and Communication Technology (ICT) within Psychological Services in Scotland. Some services are well resourced and ICT is accepted as a part of normal working practice. In other services, it is restricted to a few individual psychologists who have an interest in this area.
- ❑ There remains a variation in the computer operating systems with some services using Apple Macintosh and others PC Windows; some use a combination of the two. Even within the same operating system, there are various versions of the operating software: for example, Windows 3.1, Windows 95, Windows 98 and Windows NT4.
- ❑ Some services receive direct support from the council ICT service and as such, must conform to the corporate guidelines. In other services, they may be linked to educational computing departments. In a few cases, there is no support available.
- ❑ The level of training for staff on ICT within Psychological Services is poor. Few members of staff, whether clerical or psychological, have been able to access computing courses.
- ❑ Knowledge of ICT tends to be limited to a few who have maintained an interest. There is a lack of guidance for services on what systems are best and what ICT can really offer. In some councils, the Psychological Service is perceived, as being of low priority for ICT development. There is little capital expenditure on computer hardware. New computers are usually purchased through the limited annual budget or from fast

spend money.

- ▣ At present, most services operate some form of referrals or case database. The services that were part of the former Strathclyde Region still tend to use modified versions of the FileMaker Pro SEN Database. Other services are using existing school management databases. As these systems have been used effectively over time, *there needs to be a good reason for moving over to a newer system.*
- ▣ In an ideal world, Psychological Services would have sufficient funding to be able to employ professional consultants who would develop an MIS that would meet the needs of the service. The problem with this is that it would be very expensive and we do not yet know what these needs really are.

Taking these issues into consideration, it became clear to the project members that it would be impossible to create a demonstration database that would adequately meet the needs of all users. Instead, it was felt that it would be more effective to specify what criteria we would expect and want from an MIS. This would allow services to look at various MIS programs and evaluate them using a common set of specifications. In order to achieve this an evaluation checklist was drawn up: this is provided as *Appendix B*.

The *MIS Evaluation Checklist* covers four sections: Hardware, Software, Operating and Training. Each section has a list of specific questions that should be answered. The advantages of this are: -

- ▣ The MIS can be properly looked at and tested, based on the needs of Psychological Services.
- ▣ It removes the need for a high level of computer knowledge when looking at a system. The questions should be answered by a representative of the company that is marketing the MIS.
- ▣ It is possible to compare different MIS and identify strengths and weaknesses.
- ▣ It can assist MIS designers when customising an existing database.

The MIS evaluation checklist was used as part of the project to look at the following MIS programs: -

- ▣ SCETWorks

- ▣ Lotus Notes

Review of a Management Information System (MIS): SCETWorks 97

Agnes Neilan and Nicola Smith (in collaboration with Elizabeth Hannah)

Introduction

“A Scottish Solution for Scottish Schools” is how SCETWorks is described in the brochures; and the system claims to provide “The Power to Manage Your School”. It has been designed for Scottish Schools as a result of partnership with *Key Solutions* who are specialist developers of MIS for schools. It is compatible with *Centris* software allowing transfer of information from schools/educational establishments to the council therefore, assisting in strategic planning and facilitating the flow of information back into the school system.

A range of individual modules are available which are suitable for primary, secondary, special or independent schools. Packages can be individually tailored to meet school requirements. The system is able to manage biographical, personal, medical, Special Educational Needs, curriculum and timetable information. The modules are listed below.

Administration Manager

Attendance Manager

5-14 Curriculum Manager

Assessment Manager

Examinations Manager

Personal Development Planner

Report Manager

Library and Resources Manager

Staff Appraisal Manager

Organisational Development Planner

Premises Planner

SQA Module Manager

A range of Scottish local authorities are currently using this software and some modular parts to run administration, attendance, development planning, pupil record keeping, staff development and reviews. Several modules are applicable to Psychological Services provided the software is customised. The MIS Checklist used to evaluate SCETWorks for use by Psychological Services is contained in Appendix B.

Evaluation of SCETWorks 97

Hardware specifications

SCETWorks will run off of a *server* for a networked system with the following minimum specifications; 233MHz processor; 64Mb Ram, 3Gb free hard disk space and data drive. This will accommodate up to twenty users. SCETWorks will also run on a stand alone system with the following minimum specifications:

PC: 486/66MHz processor; 16Mb Ram; 30Mb free hard disk space,

Apple Mac: System 7 processor or above; 12Mb Ram; 30Mb free hard disk space.

SCETWorks is compatible with a range of operating systems including MacOS, Windows 3.11, Windows 95, Windows 98 and Windows NT.

Software specifications

The minimum requirements to run the Application Program are Windows 3.1 or Windows 95 on PCs and Apple Macintosh System 7 or above on MACs. The software is supplied with *Safe Backup/Restore Utility* which enables users to backup data files to a variety of locations thus protecting data in the event of a systems failure.

Operating specifications

SCETWORKS is a relational database, that operates a modular system of related databases that can be used on a stand-alone or networked basis. The modules are related to the areas normally required for a school MIS, but the fact that a user can opt for any selection of modules means that a Psychological Service could choose the most relevant modules (e.g. *Administration Manager, Reports Manager, Staff Development Manager*) and have these customised by SCET technical staff. For example, as SCETWorks is primarily designed for use by schools, files are categorised as *current/leaver*. It is possible for these labels to be renamed as *current/discharged*, making them more appropriate for Psychological Service use. SCETWorks will also *import* existing Psychological Service data from packages used on PC or Mac, thus obviating the laborious and time consuming task of inputting such data manually via a keyboard.

The report module has templates for a variety of report formats already available, but there is no limit to the number of user-designed formats. The software can be altered to accommodate organisational preferences, although this may require to be done by SCET

support staff, rather than by individual users. In addition, in relation to user flexibility, this package has the facility to define additional pop-up menus or rename menus already in place. *User Defined Information* areas allows fields to be defined for data not specifically catered for by the system, and can be used to record any type of information.

Security is ensured by means of a *password protection system*, which can be set to allow different levels of access for different users. Access can be determined by the main user/coordinator, for example the principal psychologist, allowing some users to browse some modules and input or maintain data in others. The *activity log* enables the user/coordinator to obtain an overview of who is using the system at any one time, who has been using it over a period of time, and also to determine how it is being used, and for what purposes.

There is the facility to alter *fields* globally within the system such that if a piece of data is entered or altered it will automatically be updated across the system wherever it reappears: for example, the address of a child named in a number of databases. SCETWorks allows records to be sorted across any field and can also carry out multiple sorts, for instance by Area, School type, School and Surname. It can also search across *field values* for particular variables: for example, Name, School, Area of difficulty. There is a facility that allows *mail-merge* with documents in word processing software such as MS Word. Data can also be transferred to other software packages outwith the system, such as statistical or spreadsheet packages, for further analysis. The system allows for downloading of data to other computers such as portable laptops if a licensed copy of SCETWorks has been installed on the receiving machine. This would enable individual psychologists to have, for instance, all the data relating to their personal caseload in a portable form. This data, of course, would remain *password protected*.

User training

Training is carried out at the Scottish Council for Educational Technology (SCET) by qualified staff with technical support and backup on-site and also in schools and other educational locations. There is a planned training syllabus of a minimum of two days which enables personnel to attain a basic level of user skills and confidence. Current training costs are £850 for two days, for a maximum of 12 people (2 per machine), although it may also be possible to achieve the same basic training within a cascade model, depending on trainees' prior knowledge and skills base. There is no advanced user training syllabus accredited qualification available at the moment.

Technical support

SCET offers a *Support Service Agreement* which provides full training, telephone support, on-line support via e-mail and site visits. A user-friendly manual is also provided.

Conclusion

SCETWorks offers Psychological Services a highly flexible and adaptable MIS. It is neither necessary nor desirable to have all of the modules: indeed, an extremely powerful system can be customised using *Integris* and *Administration Manager* only and all of the features described above are available using this combination. In terms of the MIS Evaluation Checklist, SCETWorks records an almost 100% positive rating. The system is extremely user-friendly with well-designed, uncluttered screens, *context-sensitive on-screen help*, an informative manual and comprehensive technical support. The data is secure and can be backed-up in a variety of ways. SCETWorks is also relatively inexpensive and, because of its modular design, can be extended to meet growing service needs for relatively low expenditure. The question which service managers have to address is whether SCETWorks offers sufficient increase in functionality and utility over their existing systems to justify its introduction.

PDP ICT Group Training in SCETWorks

During the project, the ICT Group had the opportunity to participate in the SCETWorks two day training programme. The training took the form of demonstrations of user tasks, as laid out in a training manual, and hands-on experience of completing these tasks on *Administration Manager*. Other features of *Administration Manager* were also demonstrated. The SCETWorks training team worked hard to customise the two days to suit Psychological Services needs. They provided detailed guidance at appropriate levels for a mixed ability group and were able to gear assistance to learner needs, offering practical support and discussing issues along the way. Seven of the ICT Group were able to complete most of the two day training programme and found it valuable in terms of acquiring both knowledge of how MIS are designed and operated and also practical information handling skills. Provided each individual user follows up with practice on the system, the training appears to offer an adequate grounding in the skills necessary to making full use of SCETWorks.

References

SCET (1997) SCETWorks: The Power to Manage Your School

SCET(March 1998) SCETWorks Integris 2000: Revision 2.1

SCET(April 1998) SCETWorks Safe Backup & Restore Utility: Revision 2.1

SCET (Sept.1998) SCETWorks Administration Manager: Revision 2.00

SCET (February 1998) Administration Manager Standard Reports: Release 2.0

SCET (October 1998) Administration Manager (Incorporating Timetable Manager) Secondary School User Tasks: Release 3

Review of a Management Information Systems (MIS): Lotus Notes 5.0

Nicola Smith and Agnes Neilan (in collaboration with Elizabeth Hannah)

Introduction

Communicate, Collaborate, Coordinate is the message from Lotus Notes, a commercially produced software package which has as a key aim the organising of unstructured data and information. Lotus Notes has been on the market since 1988/89, with development beginning in 1984. It was used originally by large companies and multinationals, but is now increasingly being used by smaller organisations, particularly as its flexibility, accessibility and compatibility develops. The MIS Checklist used to evaluate Lotus Notes for use by Psychological Services is contained in Appendix B.

Evaluation of Lotus Notes 5.0

Hardware specifications

Lotus Notes is compatible with almost any operating system, including the following: Macintosh, Windows, OS/2, Net Ware, UNIX, NT and Microsoft Exchange. It will run from a server, although a dedicated machine is not necessary. It will also run on either a stand-alone system or an integrated system.

Software specifications

Lotus Notes can be used with all major *application programmes*. It is highly customisable. In addition, it is possible to run the system on PC and MAC simultaneously. The system *backs itself up* in that it automatically replicates documents created within it to all users with appropriate access. It can also be backed up by the server, DVD, CD, Zip and DAT. Whole databases do not have to be replicated as a subset of relevant information can be selected, and amendments can be made from local machines.

Version 5.0 became available from January 1999. The system has been developed over a period of ten years, with technical support available at all levels, from promotional videos to services from Lotus itself and other computer companies such as IBM. Psychological services would be able to access *educational pricing*.

Operating specifications

This database system is *not relational*, hence the use of replication. It can link to other databases within its system, to others on Notes, and to external relational databases.

Transfer of data across applications is easy, and can be done in two ways:

- ▣ Import data from another application and it becomes a Notes document
- ▣ Import as an attachment and it remains in its original form, e.g. as a Word document, within the Notes system.

There is no limit to the number of records that can be held on the system. (The 4.6 version has a 4Gb capacity.)

Notes has a robust *security system* designed to protect the information both in the system and on the network. Only those with a password can access the server, and there are then varying levels of access available to documents and parts of documents. Records can be marked “private” where required. Each database has an access control list so that a user can decide who sees and/or manipulates what information. The access control list includes the following levels:

- ▣ No Access
- ▣ Depositor: can put documents into system but cannot see them again after that point
- ▣ Reader: has a reading facility only
- ▣ Writer: can create, edit and delete a document created by themselves
- ▣ Editor: as Writer but access to all documents
- ▣ Designer: allows further access to information
- ▣ Manager: allows further access to information.

Drafting of any type of *reports* can be easily done. It is also straightforward to create your own fields within a database and design templates and forms, although there are also a number of templates provided. In addition, once you have designed the formats you require, alterations are also easy to complete. There is the facility to design and modify options and menus as desired, including allocating private views. There is no real expertise required in altering layouts, unless the original is very sophisticated.

Indexing of records helps the *search* facility work effectively. Lotus Notes allows you to compute predicted dates, and will warn you if a given field value is reached or exceeded. Fields can be altered globally if desired. Searches within and across databases can be completed, but more complex analyses may require more sophisticated packages, for example, a statistics or spreadsheet application. Transfer of such data to another package can be simply done. Lotus Notes is fully linked with the Internet, and provides the facility to download information straight into a database. Further, the next time the user logs onto the same Internet site it automatically updates the downloaded information if there have been any alterations since the last visit.

A major strength of Notes is the facility it has to download to portable computers. In this way, work can be done away from the office. The calendar facility can be useful for geographically remote, busy professionals where personal contact is not always frequent. There is also the facility to see group schedules over a year, which could prove useful in coordinating meetings and identifying collective free time. Group calendar views allow the user to create ad-hoc views of multiple colleagues' calendars at once, providing an accurate picture of everyone's free and busy time. These can be bookmarked for instant access to a team's availability.

User training

It would probably take around two weeks for an individual to become sufficiently familiar with the full system, and there is an abundance of training available commercially.

Conclusion

Lotus Notes appears to be able to meet almost all of the checklist requirements, illustrating an effective and flexible package that would be adaptable for use by any size of organisation, particularly one where personnel are based in different locations, are often away from the office for long periods, and seldom in at the same time.

Applications within Psychological Services

Communication

Lotus Notes is an effective means of communication between team members due to the replication capability inherent in the system. This allows all team members to have the same information at the same time. Potential uses may include creating agendas and producing minutes for team meetings. These features would be particularly useful where a service is

rural, remote or covers a large geographical area. Bulletin Boards, memos and Post-It Messages will speed communication between team members, with schools and with clients: standard letters, newsletters to schools and other documents can be distributed. Security and confidentiality are ensured through differing levels of access controlled by a system of passwords.

Co-ordination

Lotus Notes has the capacity to organise unstructured data. Databases and information held centrally can be altered by psychologists accessing the system at agreed levels. Recording Meetings, Formal Reviews of Records of Needs and Future Needs Assessment meetings can be more readily planned and coordinated. It is possible to work off-line on alterations to a Record of Needs, for example. When the user reconnects to the server, Notes replicates the changes, which speeds up communication, cuts cost and is in line with SOEID performance indicators. Lotus also enables users to work on prototypes and customise and synchronise work, thus promoting consistency of standards across a council.

Collaboration

Lotus Real Time Notes is a interactive conferencing capability that allows workgroup members to share data documents and applications directly from their computer desktops. The system has the capacity to search attachments: for example, carry out a literature search of downloaded documents, video and other multi media. The system is flexible with the capacity to allow members to work on joint projects It has similar specifications to First Class although with more advanced search features linked to multiple databases. Integration with the Internet allows downloading directly onto e-mail.

Reporting

Lotus Notes Reporter is a report and analysis tool, which converts Notes into high quality professional reports and charts. This aspect of technology could support the busy psychologist in a significant way. Notes can provide customised templates for consultation forms, feedback forms for schools and parents, summaries of session work and many other forms of written communication. This high quality data would facilitate the auditing of service delivery with quality indicators commensurate with *The Manual of Good Practice* (SOEID,1998) and Best Value.

Intranet function

Lotus Notes can be used as an Intranet for a number of purposes including e-mail communication, collaborative work, authority wide projects, special interest groups and also for information exchange and sharing of documents. It also provides access to the Internet from any compatible Web browser. Integration with the Internet allows downloading of information. In a team or project the PEP or coordinator has the facility to carry out an electronic diary search to identify window periods.

Additional information

Lotus Notes has been trialled within one Psychological Service in central Scotland. This was less successful than had been anticipated as the service had not yet been in a position to fully articulate its training needs which meant that the trainers did not fully realise the areas in which technology could facilitate the work of the service. Training and technical back-up are available for psychologists and administration staff but the difficulties experienced by the service described illustrate that detailed planning, skilled communication and a degree of time, trial and error are required in order to successfully implement ICT. The authors contend that the potential benefits appear to make this investment worthwhile.

Reference

SOEID (1998) The Manual of Good Practice: Professional Practice in Meeting Special Educational Needs

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Lotus Development Corporation (1996) The Power of People Working Together

Topping K (1998) Electronic Literacy in Bulletin: British Psychological Society Scottish Branch Newsletter.

ASPEP Survey

Elizabeth Hannah and Jim Kane

Views of Service Managers

The aim of this survey was to ascertain the views of service managers regarding the envisaged benefits to management from, and problems with, the use of ICT within Psychological Services.

Two members of the group attended a meeting of the Association of Scottish Principal Educational Psychologists in November 1998. A brief presentation was given regarding the focus and breadth of the project to date.

Respondents were given 5-10 minutes to consider two questions. Three bullet points were indicated underneath each question. The responses were open-ended. Respondents had the option of noting between zero and three comments for each question.

Question 1

In what ways might a management information system improve the efficiency and effectiveness of my psychological service?

Results

Number of respondents	29
Total number of comments	67

The majority of respondents (24/29) made two or three comments. Only one person made no comments.

The responses were divided into four categories. It was possible for a comment to be placed in more than one category. Nine of the comments were not categorised on the basis that they were too general or failed to answer the question posed.

Analysis

<i>Category</i>	<i>Number of Responses</i>
A. Professional development (information to improve practice)	8
B. Internal quality control (monitoring and evaluating service delivery)	22
C. External quality control (information for other bodies)	12
D. Efficiency of working practices (improving service delivery)	26

Examples of comments by category

A. *"Improving access to research literature on areas of interest."*

B. *"Improved transparency in systems/management/processes."
"Simplify systems of operation - track processes."*

C. *"Answer myriad questions that come from various organisations/agencies regarding prevalence statistics."
"Developing statistics for Best Value, etc. "*

D. *"Easier access to data would avoid replication of thinking/work."*

Question 2

The problems, REALLY, with introducing and maintaining information and communications technology into psychological services are...

Results

Number of Respondents 29

It should be noted that some respondents raised many more than three points in their comments.

Analysis and comment

The responses fell into three broad but linked groups: personnel; systems; and cost + cost: benefit. An example of the linkage between these groups was that staff time and cost for training and evaluation was often mentioned as a personnel issue. Similarly, suitability and reliability of systems was mentioned as having strong effects on motivation.

<i>Personnel</i>	<i>Systems</i>	<i>Cost + cost : benefit</i>
Skills	Local authority ICT	Time
Motivation	Suitability	Cost (capital +
Training	Compatibility	maintenance)
Monitoring and Control	Reliability	
Confidentiality		

Approximately half of the concerns expressed were categorised under the personnel heading. The remaining responses were divided between the systems and cost groups.

It should be noted that where local authority ICT arrangements were mentioned, they were usually seen as a problem rather than an asset.

In the chapter entitled *The Internet and Electronic Mail*, reference is made to a number of the *personnel* issues raised by service managers in this exercise.

Motivation

- ▣ This is related to the perceived benefits of the use of information and communications technology. Benefits cited included:-
 - ▣ *“accessing reference material and current research on-line”*
 - ▣ anticipated reduction in costs incurred by *“subscriptions to various journals and on the purchase of books”*
 - ▣ *“facility to access computer software programs directly on line and download them for use”*
 - ▣ use of psychological service web sites to *“allow services to publish areas of*

research or areas of individual interest”; “provide details of service policy, mission statement, possible referral guidelines”; “provide information on Inset packages or training that they can offer”; and “facilitate the transfer of information between services”

- ▣ facility of being able to *“transfer information anywhere efficiently at high speed”*

Training

Brief reference is made to this issue at the end of the chapter entitled *The Internet and Electronic Mail*. The author comments that *“Training is probably one of the most important factors that prevent people from accessing new technology. There are many providers of introductory courses either through councils’ microtechnology departments or from the private sector. In the case of Psychological Services, it may be suitable to consider setting up a training programme internally with certain members of staff attending a course then using a cascade model to train others”*.

Readers should refer to *The Internet and Electronic Mail* for elaboration and discussion of all these issues.

Monitoring and control

The following points are made in *The Internet and Electronic Mail*:-

- ▣ *“all psychologists are bound by the Code of Conduct of the British Psychological Society.”*
- ▣ (referring to Internet use) *“...it is relatively easy to track user activity and restrict access to certain areas if needed.”*

Confidentiality

In this regard reference is made in *The Internet and Electronic Mail* to e-mail being as *“secure as conventional methods of communication”*. It is noted that where *“a higher degree of security is needed to transfer files that contain sensitive material, then it is possible to use secure e-mail”*.

ICT QUESTIONNAIRE DISTRIBUTED TO HEADS OF SERVICE

This section will outline the “*snapshot picture*” emerging from a questionnaire survey of all Scottish Psychological Services, conducted in October 1998. questionnaires were distributed by post with a request that they be faxed back within a specified but tight time interval. Anonymity was assured and the respondents were asked to consider the issues at a Service rather than an individual level. There were 27 responses received from the 32 Services. The questionnaire is reproduced as *Appendix B*.

Diagram 1 indicates that approximately 1/3 of psychologists have access to Macs, 1/3 to PC's and 1/3 access to both platforms.

Diagram 2 suggests that sole Mac usage is rare among clerical staff with most services operating solely on a PC platform.

Diagram 3 indicates that in 45% of Services there are problems of incompatibility between platforms within the Service.

One of the most arresting outcomes is the suggestion emerging in Diagram 4 that only 1/3 of all psychologists have individually assigned computers.

Diagrams 5, 6, 7 and 8 assess the extent of Service penetration for a number of ICT facilities. Reassuringly, 85% of Services report access to First Class, and approximately 1/2 have access to scanning equipment. However, access to video conferencing and voice-activated software remains very low.

Diagrams 9 and 10 illustrate that ICT training exposure is reported not to have been experienced by approximately 1/3 of all psychologists. ICT Training for Clerical Staff has been significantly greater.

(N.B. See also the *Videoconferencing* chapter for the results of the question on the use of that technology.)

Diagram 1 : Hardware Access - Psychologists

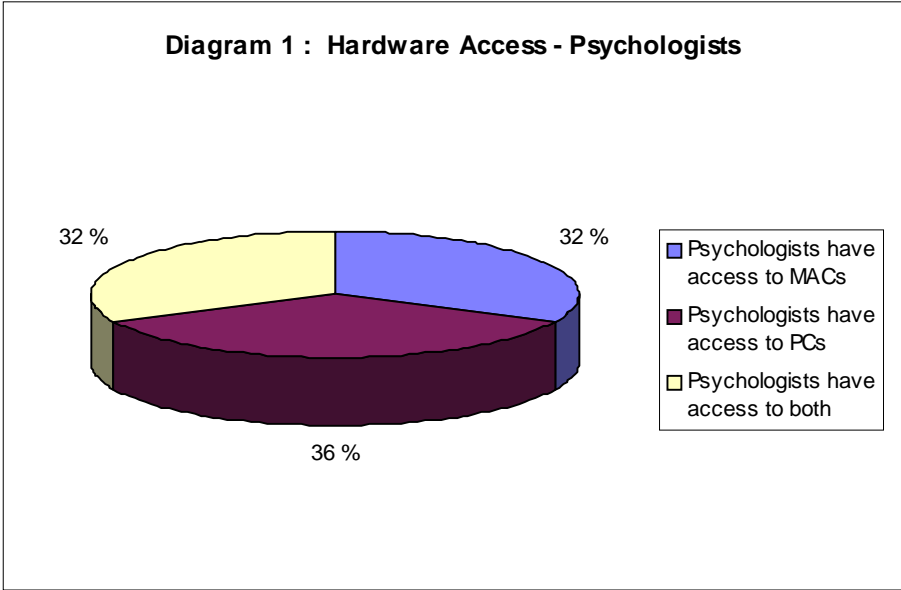


Diagram 2 : Hardware Access - Clerical Staff

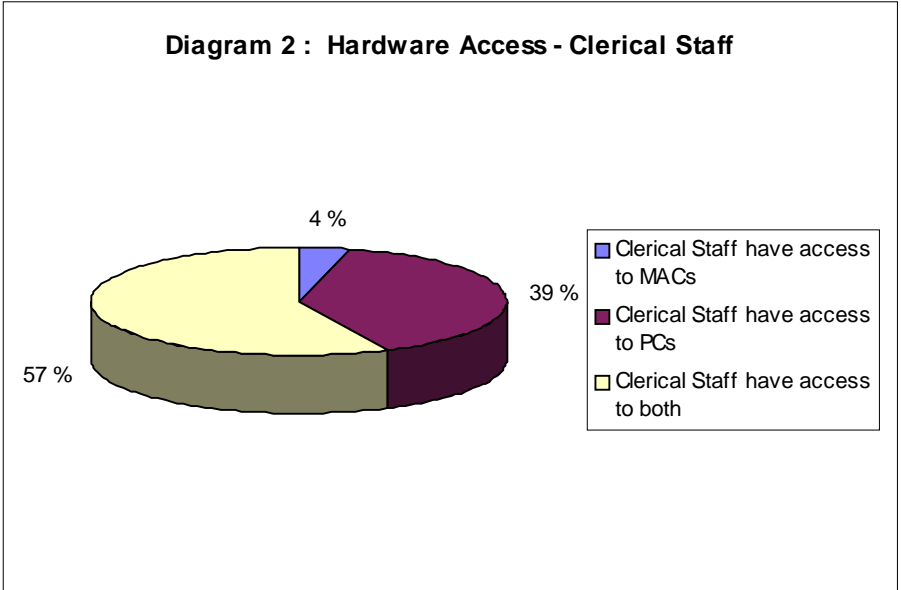


Diagram 3 : Compatible Systems

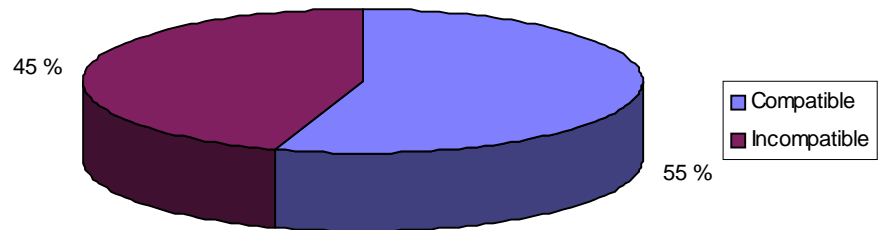


Diagram 4 : Ratio of Psychologists to Computers

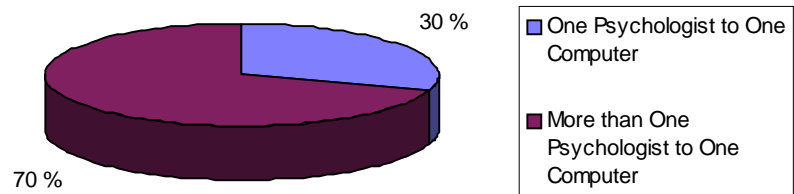


Diagram 5 : Access to First Class

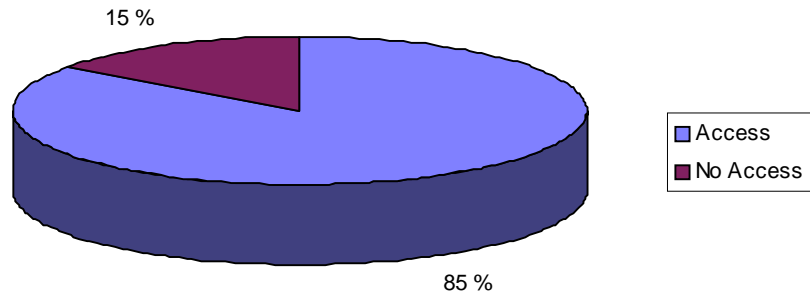


Diagram 6 : Access to a Scanner

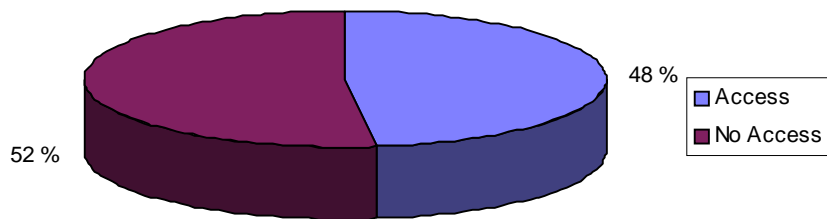


Diagram 7 : Access to Videoconferencing

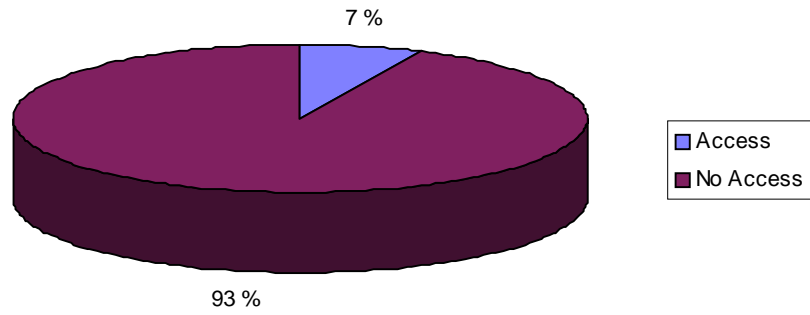


Diagram 8 : Access to Voice Activated Software

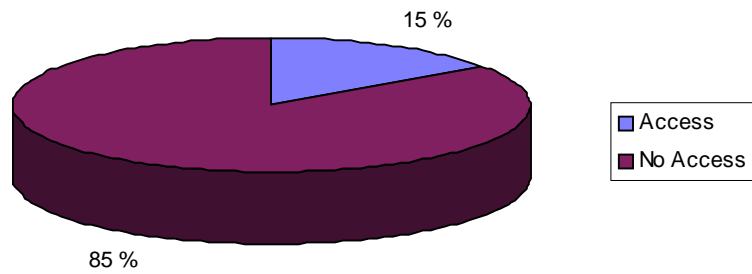


Diagram 9 : Access to ICT Training - Psychologists

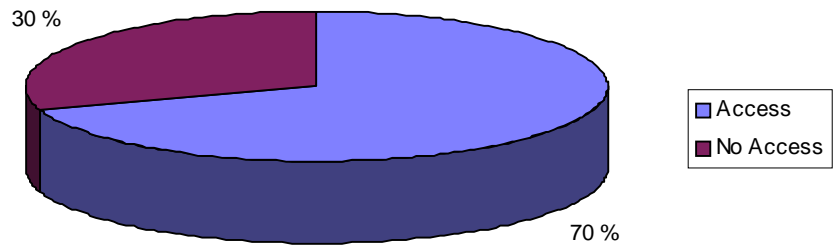
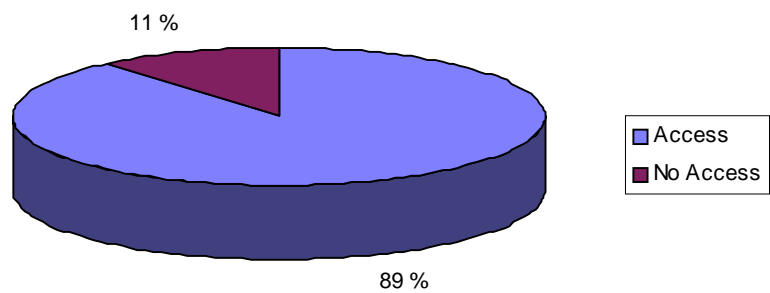


Diagram 10 : Access to ICT Training - Clerical Staff



The Internet and Electronic Mail

Barry Syme (additional material and appendix: Clare McGorry)

This chapter outlines in general the areas of Internet access and electronic communication. This field is so large that it is impossible to cover it completely. The purpose of this chapter is to provide a basic guide to assist Psychological Services to get on the Internet and use E-mail.

What is the Internet?

The Internet is a world-wide network of computer networks. These networks are connected through various communication channels. Any type of computer can be connected to the network, as long as it speaks the universal language TCP/IP (Transmission Protocol / Internet Protocol). The Internet should not be confused with the actual services that are provided on it. It simply serves as a medium through which the various electronic information and communication services operate.

In order to access the Internet it is necessary to register with an Internet Service Provider (ISP). These are commercial organisations that have fast direct Net connections, and which act as a gateway for members. In return for a fee, or in some cases for free, the ISP enables you to use a modem attached to your computer to dial up over the telephone line and connect to its computers. This, in turn connects the user to the Internet. This means that the user can access the World Wide Web (WWW), send messages to newsgroups and obtain an e-mail address that enables the user to exchange e-mail with other users.

The Internet has many technical terms or "Net-Jargon" which can deter people. The following section explains some of these terms and provides basic information on aspects of the Internet.

What is a Modem?

What a modem does is enable your Personal Computer (PC) to exchange data with other computers over a telephone line. A modem is necessary as the data produced by a PC is encoded as digital bits and bytes, and only analogue signals can be transmitted over a telephone line. In order for data to be transmitted from the PC on to the Internet and vice versa, it needs to be converted from a digital to an analogue signal and back. The modem

does this by (mo)-dulating the out-going digital signal, converting it to analogue, and (dem)-odulating the in-coming analogue signal, reconvertng it to digital: hence the term *modem*.

There is a wide range of modems varying significantly in price. The better known makes such as Hayes, US Robotics and Pace tend to be more expensive but have higher specifications. Most PCs will now come supplied with a built-in modem which means that the computer is ready for Internet access. When purchasing a modem, the rule is: the faster the modem the better. Modems can vary in speeds from 14,4Kbps to 56Kbps. The "Kbps" refers to the speed at which bytes of information are transmitted. 56Kbps means that the maximum speed for transfer is 56,000 bytes per second. The reason for choosing a fast modem is that it takes less time to transfer or download data and this is important as telephone line charges are incurred every minute that the user is on-line.

Choosing an Internet Service Provider

The ISP is the essential link with the Internet and when choosing a service provider there are a number of factors to consider. At present, there are over 100 ISPs who are all competing for business and offering a wide range of services. The larger companies tend to offer better software, services, technical support and faster connections. The most important factor is to ensure that when connecting to an ISP the telephone calls are charged at the local rate. The ISP should provide a 0845 prefixed number. This means that when you connect to the ISP, calls are charged at the standard rate of 1.8 pence per minute off-peak, 3.7 pence per minute peak. This is the main advantage of the Internet as it is possible to access information from sources anywhere in the world for the cost of a local call. The tables below list some of the major service providers with subscription charges. (Source: *.Net Magazine*, March 1999).

On-Line Services

Name	Free Trial	Setup Fee	Monthly Charge	Phone No.
AOL	One Month	Nil	£16.95	0800 279123
MSN	One Month	Nil	£14.95	0870 6011000
Compuserve	One Month	Nil	£17.95	0990 000200
LineOne	One Month	Nil	£14.95	0800 111210

Internet Service Providers

Name	Free Trial	Setup Fee	Monthly Charge	Phone No.
BT Internet	No	Nil	£11.75	0800 800001
Cable & Wireless Internet	No	£10	£10	0500 200968
ClaraNET	One Month	NIL	£11.63	0800 3582828
Demon Internet	Yes	£14.49	£11.75	0181 3711234
Direct Connection	No	Nil	£13.50	0800 0720000
EasyNet	One Month	Nil	£11.99	0541 594321
Freeserve	N/A	Nil	Nil	CD from: Dixons, PC World, Currys
Netcom	No	Nil	£14.95	0990 668060
Pipex Dial	One Month	£13.51	£14.95	0500 474739
Virgin Net	One Month	Nil	£11.99	0500 558800

(**N.B.** The charges indicated were correct as of March 1999 and refer to unlimited monthly access. This list serves as a simple guide and there are many other ISPs which have not been included.)

The major ISPs have massive connections to the Net, which means they can support a very large number of simultaneous users without the overall system being affected. Smaller ISPs can be cheaper; however they often have less capacity which results in problems such as engaged signals at times of peak activity.

Another reason for considering a large ISP is the support offered. A good ISP will supply all the necessary software to get on-line, including a Web browser and e-mail package. The software should be easy to set up and use, backed up by 24-hour help-lines. In addition, most ISPs offer free web space and additional e-mail addresses.

Most of the large ISPs provide installation programs on Compact Disc. To subscribe to an ISP it is necessary to install the software then connect to the ISP and register with a credit card. Although a free trial may be offered, an account is opened on the credit card and charges are incurred after the trial period, unless the user contacts the ISP before the end of the period. A problem arises if a Psychological Service wants to subscribe to an ISP. As most Psychological Services will not have a credit facility and corporate accounts need to have a VAT registration number, only a limited number of ISP's will authorise membership. The recent introduction of ISPs such as Dixons Freeserve and Free-Online overcomes this problem, as

they have no subscription fee; therefore it is now possible to have Internet access at no cost except for telephone charges. Freeserve offers full Internet access with unlimited e-mail addresses and 15MB of web space. The main drawback is the technical support line which costs 50 pence a minute, however you would only have to pay this if a problem arises. As part of this project, a number of ISPs were trialed over several months and Freeserve offered the best value.

In addition to ISPs there are a number of On-line Services such as CompuServe, AOL and MSN. These are similar to ISPs but offer additional services such as member interest groups and dedicated support sites. This can make it easier to find information on the Net but the user pays an additional premium for these services.

Browsing the World Wide Web

Once all the correct hardware and software is installed and you have registered with an ISP, it is then possible to access the World Wide Web (WWW). In order to look at the Web, a browser is required. Netscape Navigator and Microsoft Internet Explorer are examples of web browsers and these will be supplied by the ISP or will come with the computer. The browser is the program that allows the user to display and download information via the Internet from WWW servers. When working on the WWW, it is useful to think of it as a large book. The user makes a request or search for a specific topic and the browser shows the page. As the Internet has no central control, there is no main index of what is available. To find a specific item, a search engine is used. This is a program that scans web pages in privately owned indexes for data which matches the key words entered by the user and generates a list of Web pages with comments. The user can then look through this list or further refine the search until an appropriate page is found. The user then opens the page and can access the information. The user navigates around by using links. These links are access pathways to other Web pages. There are many search engines and they differ in the kind of information they specialise in finding. Some of the most common general search engines are Lycos, Yahoo, Alta Vista, Infoseek, UK Plus and Yell. There are other more specialised search engines that will find business addresses (Yellow Pages), People (White Pages) and E-mail addresses (Whose Where).



If the user knows the Web Site Address or URL, it is possible to enter the address and the browser will find the site and open the correct page. Most large corporations, universities and institutions have a web site which users can access. Web addresses have a standard protocol and it is important that care is taken when entering an address. Examples of Web addresses are:-

<http://www.bps.org.uk>=British Psychological Society Home Page

<http://www.tes.co>. = Times Educational Supplement On-Line

Everything that the user sees on the Web is downloaded onto the computer and stored in the Cache File or Temporary Internet Files within the Windows Folder. In addition, the computer records every site visited and this is stored in the History Folder. This allows the user to revisit sites and provides a record of user activity.

The WWW and Psychological Services

Anyone who is carrying out any form of research needs to have access to the Internet and the Web. The speed at which the Web operates allows the user to obtain up to date information on any topic and it is now possible to look at recent research carried out in universities anywhere in the world from a PC. A useful example is in the area of medical conditions. If a psychologist comes across a rare genetic disorder and needs to find out more about it, it is simply a case of connecting to the Web site at: -

<http://www3.ncbi.nlm.nih.gov/Omim/searchomim.html>

which accesses the OMIM database of genetic disorders. *A list of useful sites for Educational Psychologists is to be found in Appendix C.*

At present many services spend a significant amount of money on subscriptions to various journals and on the purchase of books. It is likely that this will be reduced in the future as psychologists see the benefit of accessing reference material and current research on-line. It is important that service managers are aware of what information and resources are available on the WWW and that psychologists can easily access it.

A further advantage is the facility to access computer software programs directly on-line and download them for use. This reduces the need to purchase software and wait until the program discs or CDs are delivered. It is possible to obtain upgrades of most programs on the Internet if you have registered the licence.

One area of concern that is frequently raised is the issue of users accessing inappropriate or irrelevant sites and merely wasting time "surfing the 'net". In this context, two aspects are worth considering. The first is that all psychologists are bound by the Code of Conduct of the British Psychological Society. Second, it is possible to set up any computer so that every Web site and every item of information is recorded. All images, whether text or graphics, are stored in the cache file within the operating system. The cache file or temporary internet items file can be easily accessed and checked if required. Although there is a facility to delete this cache, there will always be traces on the operating system which can be recovered by a computer technician. In addition, it is relatively easy to track user activity and restrict access to certain areas if needed. The Internet Tools control panel can be configured to screen various types of content as well as to provide levels of security. There are therefore many safeguards which can be put in place to ensure that inappropriate material is not accessed and this concern need not be a barrier to professional use of the Internet. Service managers might also find it useful to establish a set of guidelines for good practice.

The development of Psychological Service web sites

As was mentioned previously, most ISPs provide free Web space, often 5 to 20 MB. This enables members to design and establish their own Web site for others to visit. At present, no Psychological Service in Scotland has a Web site. It is relatively easy to create a site as there are many programs that assist in the process. The Internet magazine *.Net* is a useful reference and provides step by step guidance on Web page design.

There are a number of reasons for Psychological Services having Web sites: -

- ▣ It would allow services to publish current areas of research or areas of individual interest. For example, if there were a group of psychologists working on a specific

area of professional practice such as Solution Focused Therapy or EMDR or the development of practice guidelines, then regular updates could be added so that others could either monitor or join in.

- ▣ With the number of parents who now have access to the Internet, it would be appropriate to provide details of service policy, mission statement and possibly referral guidelines.
- ▣ Services could provide information on Inset packages or training that they can offer.
- ▣ It may facilitate the transfer of information between services, as it is possible to attach e-mails and forward documents.

This is an area that requires further extensive work and, in time, it is likely that all services will have a Web site either as part of the local authority corporate site or as a separate service.

Electronic Communications

Electronic mail or E-mail is a fast and efficient method of communicating information to individuals or groups. E-mail messages can be simple text messages or they can contain other types of computer files that have been attached. These attached files, commonly referred to as *attachments*, may be application programs, data files, sound or video files. E-mail is much faster than any conventional communication system and permits almost immediate feedback for the user. Most modern e-mail systems operate via an e-mail server. If a user has Internet access then the Internet Service Provider will usually supply an e-mail program such as Microsoft Outlook Express or Netscape Communicator. These programs allow the user to compose a message and then send it to the mail server based at the ISPs location. The message is then transferred from the senders ISP server to the recipients ISP server where it is stored. When the recipient goes on-line the e-mail program checks the In box for any new messages which are then downloaded. The message and any file attachments are then stored on the recipients computer. The speed of the process is limited only by the speed of data transmission and the cost is incorporated within the normal on-line and telephone connection charges. It is therefore possible to send documents across the world almost instantaneously at a fraction of the cost of conventional means.

The benefits for Psychological Services of being able to transfer information anywhere

and efficiently at high speed must be considered. Most ISPs will allow the creation of multiple e-mail addresses, which means that a service as a whole could have an e-mail address; e.g.

PsychServices@southeast40.freemove.co.uk

Additionally, individual psychologists could have their own e-mail addresses within the office; e.g.

johnsmith@southeast40.freemove.co.uk

Electronic mail security

In general, e-mail is as secure as conventional methods of communication. When we send conventional mail we post a letter and assume that the Post Office ensures that the letter or report is secure until it arrives at the intended recipient. If a higher level of security is required then recorded delivery may be used. With e-mail the same system applies. When a message is sent to the ISP server and on to the recipient's ISP server the message is the responsibility of the ISP's security system. The message could only be intercepted if someone had access to the ISP server. Most ISPs will operate under a code of practice to ensure the security of their network and users should assume that in most cases their e-mail has not been compromised.

There are two ways in which unauthorised users could access e-mail messages. It is possible that the e-mail could be read by others once it has been downloaded onto the recipient's computer. It is therefore important that users ensure that their ISP user name and password remains secret as this prevents unauthorised access to their files. As a matter of course, all computers within Psychological Services should have access restrictions in force which involve password protection on start-up and screen saver password protection. This ensures that the computer is locked out if it is left unattended for a period of time.

The second possibility is that the sender incorrectly selects the e-mail address or send carbon copies to others. As most e-mail addresses are quite long, it is usual to store addresses within an electronic address book, which can easily be accessed. Care must be taken when selecting names from this file to ensure that messages are not sent to the wrong address or that the carbon copy facility is not selected.

Secure E-mail

Within Psychological Services, there is a significant amount of information that could be

considered confidential. If it is felt that a higher degree of security is needed to transfer files that contain sensitive material then it is possible to use *secure e-mail*. Outlook Express offers the facility of using a digital ID or certificate as a means of proving your identity on the Internet. This is a form of electronic ID card that allows the user to sign e-mail, so that the intended recipient can make sure that the message actually came from the sender and has not been tampered with. The digital ID also allows the user to send and receive encrypted messages, which permits the highest level of data security. This involves the sender encrypting the message then sending it in coded form that cannot be read by anyone unless they have been given the encryption key.

Digital IDs have to be obtained from a certifying authority which is an organisation responsible for issuing digital IDs and continuously verifying that they remain valid. Several companies provide this service. VeriSign Inc is one that is recommended by Microsoft Corporation and charges US\$9.95 per year for this service.

As the Internet and the use of electronic communication continues to develop, the need for increased security will grow. As part of this project, e-mail has been trialed over the past 6 months and no problems have been encountered. Already it has become an accepted system within everyday administrative practice.

Computer security

In the previous section, the matter of security was touched on and it may be appropriate to comment further. With the increase in the number of PC systems within Psychological Services, it is likely that in future, every Psychologist will have regular access to a computer. The issue of confidentiality and security of files must be considered. The computer should be viewed in the same manner as a filing cabinet. When information is stored on the computer, measures must be adopted to ensure that only authorised users can access it. There have been a number of reports in the national news over recent years where discarded microcomputers have been found to have confidential information stored on the hard disk. It is important that Psychological Services establish security protocols to ensure that the information held on PC's and Laptops remains safe. This can be achieved through the following measures: -

- ▣ Ensuring that all computers have password protection on startup. This can be achieved on PCs by pressing the F2 key as the machine starts. Then, by going through the Set-up programme and activating the *Security* menu, create a *Supervisor*

and *User password*. Once this has been done, the computer will not start up until a password has been entered. It is also possible on Windows 95 and 98 to set up a password that allows Windows to open. This can be done through the Control Panels file and then Passwords file.

- ❑ On Apple Macintosh computers there is a program called At Ease, which allows the user to set up an access password for individual or multiple users. At Ease now comes as standard on all new Apple computers.
- ❑ Once a computer is operating it is also important to install a screen saver with password. This allows the user to leave the machine running but closes the screen down. The screen will not reappear until the correct password has been entered. This is useful, for example, if the user goes for lunch and the machine is left unattended. All new computers come pre-installed with screen savers. To activate, go to *Control Panels*, then *Display*, then *Screen Saver*. There is a variety of different screen savers to choose. Set the Wait time to around 10 minutes which allows the user to leave the computer for a few minutes but not unattended for a long time.
- ❑ When a computer is being replaced, it is important that the Hard Disk is reformatted to ensure that all sensitive information is removed. If a computer breaks down and it is not feasible to repair, it is essential that the hard disk is wiped or removed. With PC's, it is possible to use a program such as BCWipe, which is a freeware utility that enables users to remove files permanently from Directories and Disks.
- ❑ Alternative storage mediums such as floppy discs, CDs, DAT Tapes, Zip Cartridges should be stored under lock and key, as any conventional file would be.
- ❑ Special attention must be taken with portable computers such as Laptops. These are more likely to be stolen than a large desktop machine so there is a need for increased security. A password should be installed on Start Up with additional passwords on programs such as Database files.

The Way Forward?

The results of the questionnaires completed by ASPEP members (see *ASPEP Survey*) clearly show that the Internet and e-mail are not being fully utilised by the profession. The question of whether Psychological Services should be on the Internet is somewhat irrelevant as Psychological Services cannot afford not to be. The debate over issues such as which ISP is best, who should have access and whether users will waste time looking at irrelevant sites, is preventing psychologists from accessing the most useful resource currently available in education. The Government's aim for every newly qualified teacher to be ICT competent by the Year 2002 is well underway, yet there seems to be little progress within Psychological Services.

The cost of PCs is now a fraction of the price of several years ago and it is now possible to purchase an Internet ready PC for less than £700. A modem for an existing computer can cost as little as £80. The introduction of ISPs such as Freeserve and Free-Online.net has removed the need to pay subscription fees. It is therefore not expensive to use the Internet.

Training is probably one of the most important factors that prevent people from accessing new technology. There are many providers of introductory courses either through councils' microtechnology departments or from the private sector. There are many companies that specialise in Internet training courses and most colleges will offer training on a variety of computer related topics. In the case of Psychological Services, it may be suitable to consider setting up a training programme internally with certain members of staff attending a course then using cascade training to teach others. In summary, the Internet and Electronic Mail offer significant advantages to Psychological Services and the profession will benefit from these powerful tools.

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Scottish Council for Educational Technology (1997) CyberSchools Initiative- Training Manual. SCET, 74 Victoria Crescent Road, Glasgow, G12 9JN

EPNET User Survey

Nicola Smith

EPNET is a computer mailgroup set up by a group of Principal Educational Psychologists and universities, in England and Wales, in an attempt to promote communication, contact, and information exchange amongst the members of the profession. It is also used as an *information service* to post copies of Department of Education or Welsh Office documents of relevant interest. EPNET has been running for over a year and, as word spreads about the system, there appears to be an increasing number of people logging-on and registering.

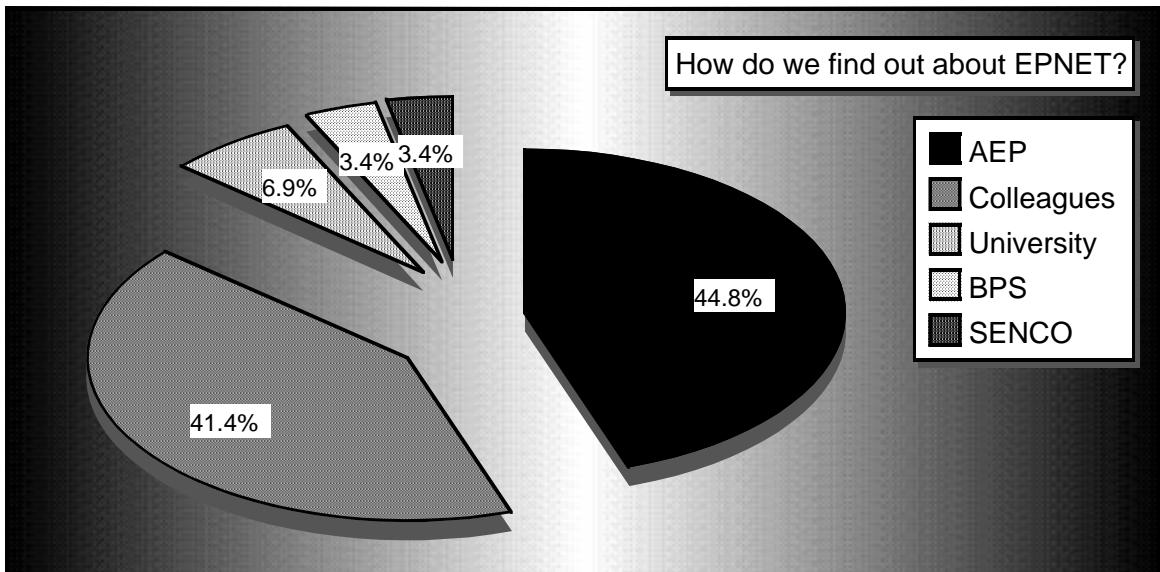
A survey questionnaire (see *Appendix D*) was devised to try to gain an overview of how many people are using EPNET, in what way they are using it, and to look for any useful suggestions or comments about the overall way the system runs. The survey was initially posted onto the First Class system, but received only five or six responses, an indication perhaps of the level of awareness about the system within Scottish Psychological Services. It was therefore decided to post the survey onto the EPNET system itself. This resulted in a total of 29 replies. The following summarises the results of the survey.

1. How do we find out about EPNET?

The majority of respondents found out about EPNET from two main sources:-

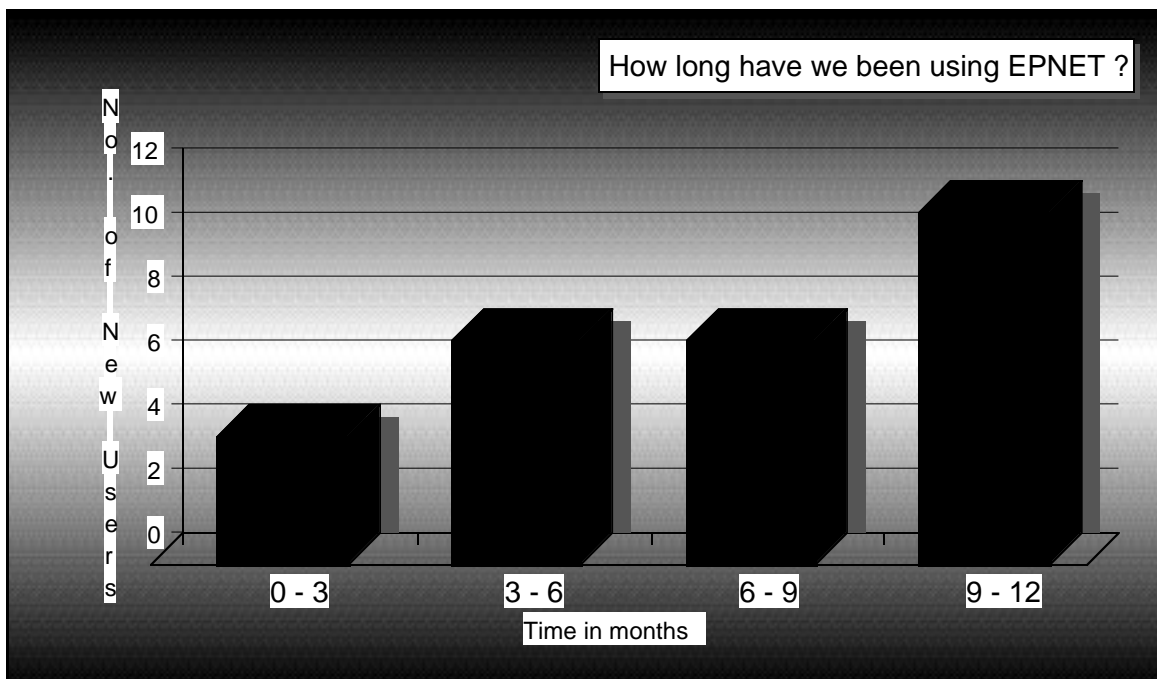
- ▣ via professional organisations, mainly the AEP.
- ▣ word of mouth via colleagues

In addition to the fact that the service was set up in England and Wales, these results perhaps explain why Scottish EPs are largely unaware of the service; word of mouth will have been mainly within AEP circles; that is, English and Welsh services.



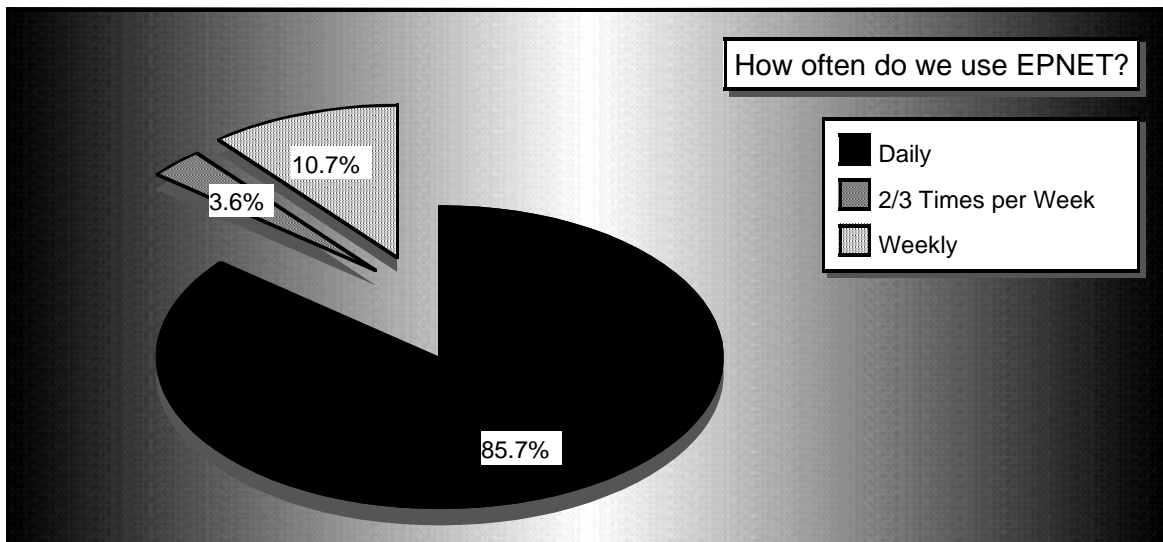
2. How long have we been using EPNET?

As of February 1999, the system had 329 registered users. The length of time people have been registered ranges from one day to 12 months, highlighting that it is continuing to pick up new members. The following illustrates, from the responses received, the trend in numbers of people registering for each three month period since its inception



3. How often do we use the EPNET?

The majority of respondents check in with the system on a daily basis, with others mainly logging-on either two to three times a week, or on a weekly basis. No respondents reported checking any less than that, although there may be a response bias; those returning replies to the survey are more likely to be those that log-on frequently. Does the fact that most respondents log-on daily suggest that a significant number of EPs in England and Wales have access to e-mail at work?



4. How do we use EPNET?

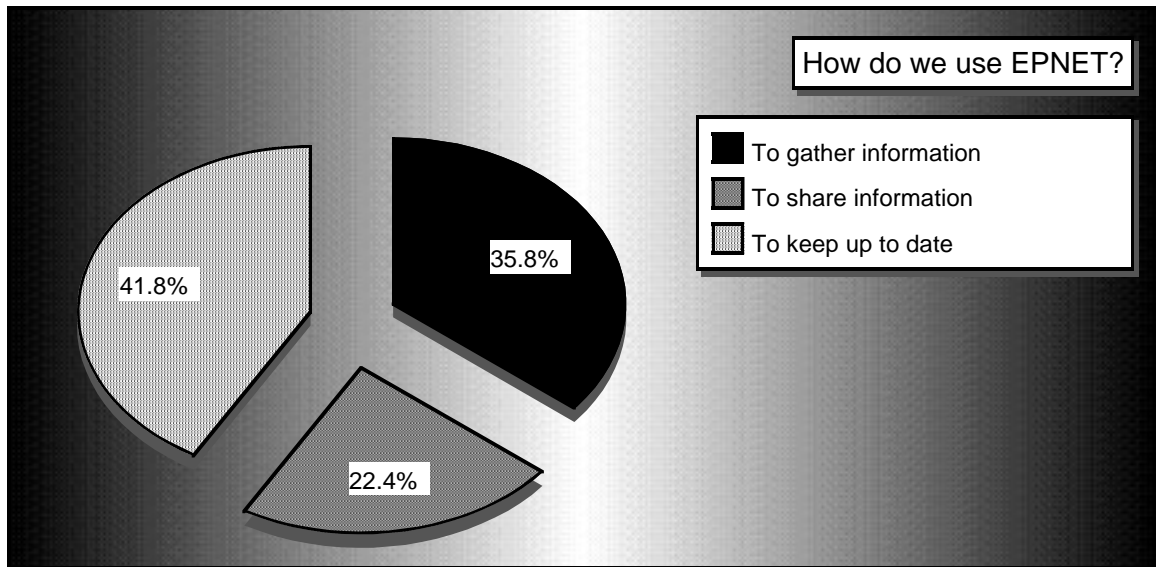
There are over 300 registered users of EPNET, but do they all use the service in the same way? Respondents were asked to indicate in which of three ways they used the system:

1. To find out information from other EPs.
2. To share information with other EPs.
3. Simply to keep up-to-date with topics of interest amongst the profession.

Almost 80% of respondents indicated that they used EPNET to keep up to date with topics of interest and to gain information from other EPs. Certainly, many respondents indicated more than one choice, but only 22.4% said that they used it for sharing information with others. This trend is illustrated by logging-on to the system. Only a small number of users' names

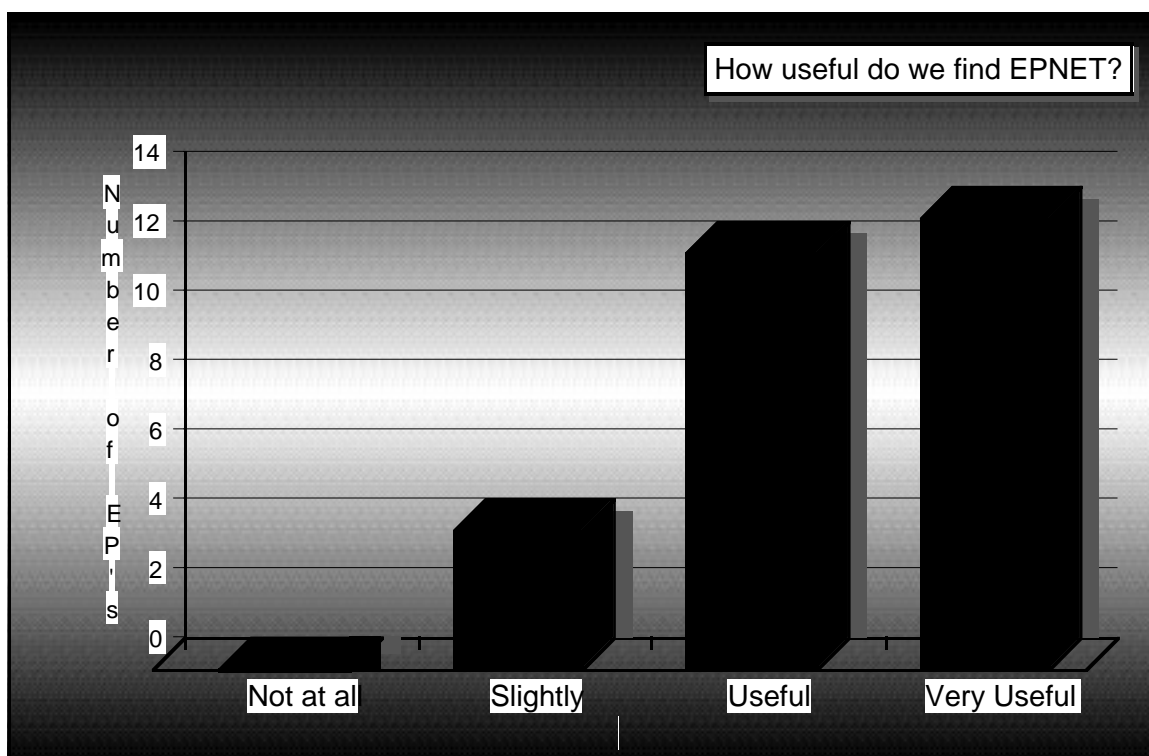
consistently appear against messages and responses. This issue drew comment from a number of respondents: e.g.

'I've always been puzzled by the fact that we have a large number of subscribers, but in spite of this, we have a very small number of contributing members'.



5. How useful do we find EPNET?

Respondents were asked to choose how useful they felt the system was on a scale ranging from 'Not at all' to 'Very Useful'. The graph below shows that the great majority (86%) of respondents find the system either 'Useful' or 'Very Useful', with just under 50% indicating they find it 'Very Useful'.



Additional Comments

The final question of the survey was an open-ended request for further comments. Almost all of the 29 respondents provided further information ranging from a short sentence to four or five points. Where there was commonality among responses they have been categorised as follows:

- | Category of Comment | Number of responses |
|--|---------------------|
| 1. Need for more organisation of the system
<i>'The mix of musings and hard information is interesting but I often don't have time to sift through it all.'</i>
<i>'I think the idea is excellent but the volume of unsorted material which keeps appearing is very offputting and in fact, I feel it discourages people from logging on.'</i> | 9 |
| 2. Need for more EPs/services to be accessing, and actively contributing to EPNET
<i>'We are inclined to see the same old names on a set number of issues.'</i> | 8 |

'I'd like to see EPNET used to generate discussion within the profession - but very few people seem to join in, Have we nothing to say? Or do we feel inhibited in saying it?'

3. Need for overview/training material on how to use the system 3

'An Idiot's guide to using EPNET would be much appreciated.'

'I reckon some Inset could make it 'very useful'.'

Areas of positive comment:

- ▣ useful to contact colleagues overseas
- ▣ hearing and sharing in issues, debate, discussions
- ▣ the archive system available for posting longer documents

Areas of constructive criticism:

- ▣ duplicate messages
- ▣ use of system for personal communication
- ▣ difficulty of finding useful information amongst less useful

Suggestions:

- ▣ copy/download new messages to a folder for colleagues to read at leisure
- ▣ shorter postings, rather than lengthy essays, to encourage more responses
- ▣ introduction of folders or layers to the system, for different groups/areas of interest, etc.

A number of the Scottish respondents commented that the system would be beneficial if it was more widely known about and used within the Scottish profession. Also, could SOEID/SCRE/SCCC documents be posted onto the system? Finally, would the development of this system be better than the existing First Class system, remembering that within First Class there is an element of organisation to the incoming and outgoing information?

Additional Information:

For those wishing to register with the EPNET service, and to access the EPNET archive, instructions are located in *Appendix E*.

The Use of Voice Activated Computer Systems by Psychological Services

Keith Wood

Introduction.

In common with other areas of society, Information and Communication Technology (ICT) is becoming increasingly important to education as a whole and to psychologists in particular. Management Information Systems (MIS) for schools, such as Phoenix and SCETworks, are becoming commonplace and many psychological services are developing computerised case management systems. ICT is becoming increasingly important as both a medium and an objective of education. Some Scottish education authorities already have Intranet systems in place connecting all their educational establishments and enabling direct access to the Internet via cable. Likewise, many parents are computer literate, have access to the Internet and are able to download information on special educational needs to which psychologists may not have access. It follows that psychological services would be well advised to "tool up" in terms of both hardware/software and skills, if we are not to be left behind by the ICT revolution.

The existence of this ICT theme in this PDP cycle is itself evidence that individual services are taking up the challenge presented by ICT. On the other hand, there is considerable anecdotal evidence that many psychologists remain "computer illiterate" and appear to see little advantage in developing expertise in ICT. The reasons for this would appear to be many and various: many services have no access to modern computer hardware and therefore have no opportunity to upgrade their skills; there is often a training issue with psychologists frequently being unable to access appropriate courses; computers can often seem intimidating for the novice; they can be time consuming and exasperatingly idiosyncratic in operation; there is often insufficient technical support (see below); some psychologists have no keyboard skills and consequently discover no advantage in using a computer.

Whatever the reasons for the "technophobia" evinced by some psychologists, this is a situation that is unlikely to be permitted to continue. If psychologists do not voluntarily make the transition to the ICT world of the 21st century, then the pressure of this increasingly pervasive technology will certainly force it upon us. There is much to be said for jumping ahead rather than being pushed. However, whichever way we choose, remaining computer

illiterate into the third millennium will not be a viable option.

The Hypothesis

It follows, therefore, that anything which can encourage psychologists to come to terms with the technology should be welcomed. On the face of it, voice activated software appears to do just that. At least one of the *continuous speech* systems on the market promises to enable the user to "type by speaking naturally and clearly without pausing between words", directly into Microsoft Word or other Windows applications at up to 140 words per minute. You are offered the "added convenience" of "sitting back comfortably" as the system reads documents such as e-mail to you; or you can ask it to read back text to help you check for mistakes. Such are a few of the claims made in the the packaging blurb.

Clearly such a system, if it does what the advertising promises, would be a boon to psychologists. By by-passing the keyboard, it should be possible to produce reports, records of involvement or action plans in minutes, possibly even on-site in schools. The advantages are manifest and would surely tempt the most staunch "computerphobes" to pick up a laptop. However, the converse would also appear to be true; if the systems do not do what they promise, then the resulting negative experience is likely to reinforce the "computer phobic" psychologist. It has therefore become necessary to evaluate some of the voice activated systems on the market.

The Research Design

The research design was of necessity limited by the hardware available in the researchers' council. Initial grandiose plans to trial every voice activated system on the market had to be shelved because of hardware and time constraints. All the continuous speech systems on the market require fairly powerful hardware (see below) and there were only four computers available to the researchers which could operate these systems. Neither is it possible to install two different systems concurrently as advice from the manufacturers had indicated that there could be interference between systems. In addition to this the continuous speech systems take a great deal of time to "train". Although the manufacturers claim that only one hour is necessary to create individual voice files, in practice and in order to be fair to the systems, we found that it took far longer than this to get optimum results (this has implications for the use of voice activated systems as a learning support tool - see below).

Due to these constraints we ultimately decided to evaluate the two most advanced systems

that we could find on the market, on the principle that it would only be the most advanced *continuous speech* systems which would be of any utility to psychologists. Four psychologists (**N.B.** see *Acknowledgements* section), all of whom were relatively computer literate and extremely keen to get the systems up and running, trialled the two systems and recorded their evaluations.

Hardware requirements

System A: *Dragon Naturally Speaking Deluxe*

- ❑ At least a Pentium 166 MHz processor (or equivalent)
- ❑ Windows 95/98 or NT40
- ❑ 16 bit sound card (recommended 32 bit sound card) with microphone input jack
- ❑ 256 KB cache memory
- ❑ 3d2MB RAM
- ❑ Twin speed CD-Rom drive
- ❑ 250 MB hard disc space plus additional for temporary storage

System B: *IBM Viaoice Gold*

- ❑ At least a Pentium 133 MHz processor IBM compatible PC
- ❑ Windows 95 or Windows NT
- ❑ Industry standard 16 bit sound card or built-in audio system on a desktop portable, including the Sound Blaster AWE32 and other selected cards.
- ❑ Approximately 65MB free hard disk space plus additional space for temporary storage during training and other operations.
- ❑ 32 MB RAM if running Windows 95
- ❑ 48 MB RAM if running Windows NT
- ❑ CD-ROM drive for installing from compact disc.

As can be seen, both systems require advanced and probably dedicated hardware for their installation and operation.

Evaluation

Various models of evaluation at various levels of formal and informal sophistication were considered. In the event, none of these were of any utility since the actual performance of the two systems was so disappointing as to render systematic evaluation nugatory.

All four psychologists were able to install the software with ease. In every case however, when it came to training the voice files to recognise the idiosyncrasies and inflections of the researchers' speech patterns, the results were "below average".

Technical Support

Perhaps the most important recommendation of this project is the need for good technical support to enable the optimum performance from these systems and to save the operator's sanity! Since the laptops which we were using for the evaluation had been especially ordered because they were compatible with the voice activated systems which we trialled, we had not anticipated difficulties with setting these up. However, when the researchers tried to discover what had gone wrong with the set-up of these systems, we were passed from the software maker's technical help-line to the hardware maker's help-line to the sound card manufacturer's help-line to the Internet and to our council's technical help-line. None of the help-lines were of any help! No one took responsibility for the operational deficiencies which we were experiencing and no agency was able to give us advice as to how this performance could be improved. The results can be seen below in terms of what the dictation systems produced when two researchers dictated in a model passage taken from the SOEID publication *Children and Young Persons With Special Educational Needs Assessment and Recording* (p7 para 24) :

Dictation model

The Range of Needs

Underlying the recommendation of the Warnock Report is the concept that special educational needs occupy a range from the minor and temporary difficulty to the severe and long lasting. It is now increasingly accepted that the special educational needs of individual children will rarely remain static, but will change with growth, onset of maturity and educational progress. Children ostensibly with the same difficulties may occupy different points on the continuum of special educational needs and may require different forms of provision to enable them to gain the greatest benefit from their education. The same applies to young persons.

System A

(After ten hours training)

*On the front row over the VAT on the role of the them when Covent the range of any hope for a woo and you are up there will unnamed 111 unknown will 1111111
will will will have a refund or lion the recommendation of the award will be reported in fact
will run the concert that it would be a doctor to commands of "a range from the minor and
temperate of the cruelty to the severe and along were some 11. reward when one-stop we will
want will the West will resume return it is to allow Iraq recently accepted that the special
pitch occasionally bound of individual children will run well awarding will reveal 111 Warren
will run refer all rural world rarely ring at static but will change would quarrel or as a to
maturity and the educational programme we will run when there we were winning Arab
women were wrong. From the children are asked innocently with seeing her difficulties may
occupy their different points on a continuum of the special educational needs room will run
we will win an area require a different ball that the provision would be available there would
mean a greater spinner put them on the it tricky one. The same applied to a young personat
a*

System B

(After 20 hrs training)

contingent need

*Tonnes early in recommendation of warm tour a concept educational need occupied a range
from the Martin in temporary difficulty to disappear in long-lasting. At attend needs to take
children static and it seen deemed and grew from the maturity and educational programme
and. Children at Labour and difficult to the occupied points in on the continuing of special
educational need to acquire different forms of provision to an authentic lucrative benefit
from education. If the young person.*

Clearly such results are of no utility to experienced computer users never mind the novices whom we hoped to encourage. Not only would these examples be likely to reinforce a "technophobe", it is significant that none of the four computer literate psychologists who trialled the systems continued to use them after the trials were complete; the software was quickly erased on all four laptops.

We should insert a caveat here, however: it may have been the case that with appropriate

technological support, the results may have been better. We have heard subsequently, for example, that this software is not particularly compatible with laptops, although there is no warning to this effect on the packaging and our laptops were deliberately chosen for their level of compatibility with the software. However, as we have indicated above, this support was not forthcoming and even if it had been, it would not have met the original criterion which was to encourage the "technophobic" psychologist to get more involved with ICT.

Learning Support Issues

Although it was not in our remit to research the learning support applications of these packages, we did come across some LSS departments who were trialling the software for use with dyslexic children and this is worth a passing reference here. Interestingly, most of the LSS teachers that we talked to had given up on the more sophisticated continuous speech software. This is because training up the voice files on these systems requires at least an hour of continuous reading into the computer and very few children with reading difficulties are likely to be able to do this. It is the simpler systems, which require single word training, that have proved most useful in this respect. Although we do not have final research results available, the general reaction amongst learning support teachers was that no matter which software was used, the time investment necessary to get it up and running were not justified by the results.

Conclusions

Bearing in mind the caveats noted above with regard to technical support and appropriate hardware, it is difficult not to come to the conclusion that neither of the two systems trialled in this study is sufficiently sophisticated to meet the required criterion, which is to encourage reluctant psychologists to use ICT resources.

For such systems to be successful in this respect, comprehensive ICT support from knowledgeable professionals is not only desirable but a prerequisite.

The choice of hardware, especially with regard to choosing laptop or desktop and appropriate soundcard, may be crucial to the utility of such systems.

In addition to this, training issues take on paramount importance: the four psychologists taking

part in this trial were all enthusiastic "technophiles" who were relatively knowledgeable on ICT matters. Yet some were left exasperated by the technical "blind alleys" that they were led up by this software. Clearly training issues must be addressed as a matter of priority if progress is to be made in these areas.

Lastly, although the results above can by no means be regarded as successful, it may well be the case that the next generation of voice activated software will actually do what the advertising claims. If so, it might still be a boon to psychological services and would be well worth re-evaluating.

Acknowledgements

The author would like to thank the following colleagues in City of Edinburgh Psychological Services for their invaluable assistance in completing this evaluation project:-

- ▣ J. Duguid, Principal Educational Psychologist
- ▣ J. Johnson, Senior Educational Psychologist
- ▣ M. Wildgoose, Educational Psychologist

Audioconferencing

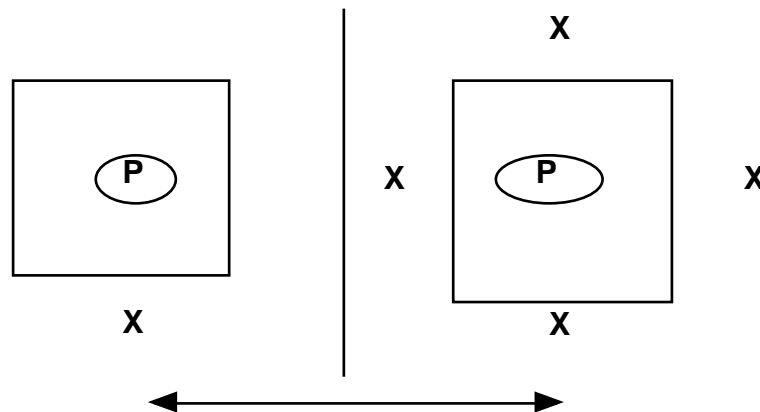
Elizabeth Hannah and Jim Kane

Audioconferencing is the term used to describe methods of audio communication using standard telecommunications systems. Most modern telephone systems and handsfree handsets will have this facility. Audioconferencing can range from two people communicating at two sites using standard telephone equipment and phone lines to a number of people at a number of sites using a conference call arrangement. Where you have access to telephones with a handsfree facility you could have a small group of people at one or more sites.

Some scenarios are detailed and illustrated below:-

Scenario 1

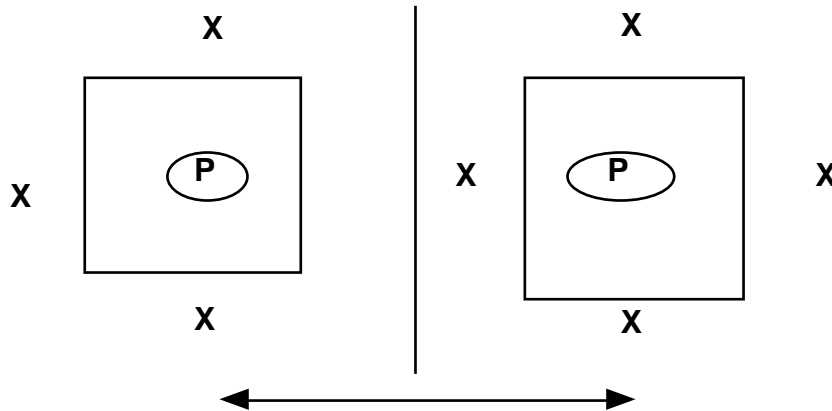
Two sites are involved. One individual communicates with a group.



N.B. *P = telephone handset (with or without a handsfree facility) ; X = participant*

Scenario 2

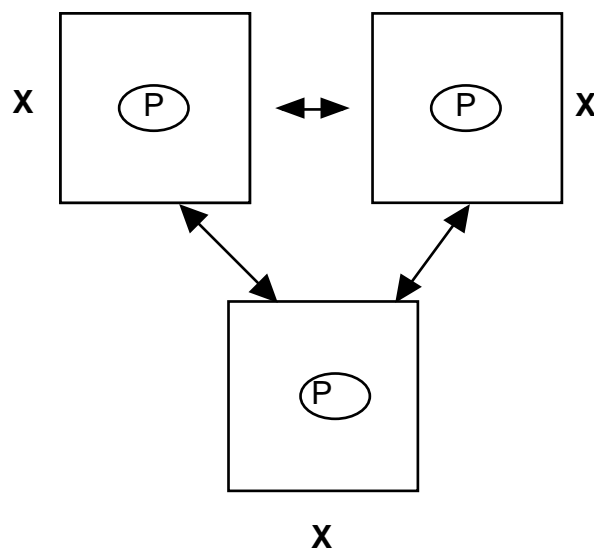
Two sites involved. One group communicates with another group.



N.B. *P* = telephone handset (with or without a handsfree facility) ; *X* = participant

Scenario 3 Three Way Calling

Three sites involved. One (or more) individual(s) at each site.

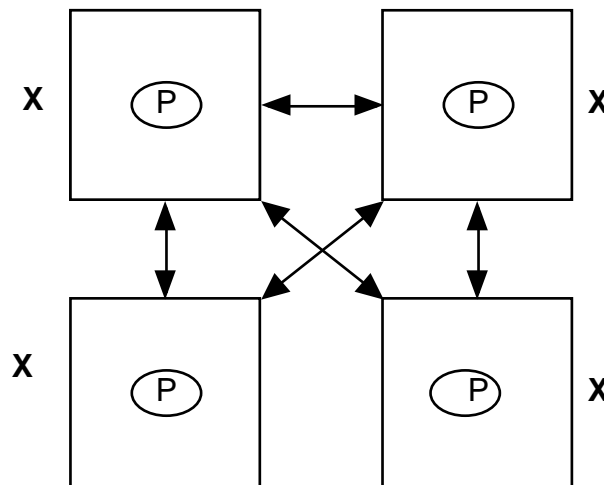


Three way calling is a facility offered by a number of service providers. There is a monthly or quarterly charge for the service e.g. £1 per month with Telewest Communication; £4 per quarter or 50p per use with British Telecom (correct as of March 1999). The initiator of the call pays for the call charges which are equivalent to twice the standard rate at time of call.

Making a call is very easy. There is no need to arrange the call through an operator. The initiator of the call dials the first number; presses the recall button; dials the second number; presses the recall button when receiver of call answers; and thus opens up three way conversation. To terminate the call, the initiator replaces the receiver (information provided by Telewest Communication, March 1999).

Scenario 4 Conference Call Arrangement

More than three sites involved. One (or more) individual(s) at each site.



Conference call arrangement is a facility offered by a number of service providers. Information was obtained on the current service offered by British Telecom. British Telecom have a conference call number. There are two types of conference call arrangements. One is called *dial-in call* which is used, for example, when six people want to audioconference from six different locations. Each person would ring an operator (same number) to make this arrangement. The second is known as *dial-out call*, whereby the

operator/receptionist would phone each of the participants. In the latter case, it is simply a matter of booking a date and time (preferably 24 hours in advance) via one of the bureau receptionists who does all the organising thereafter.

With British Telecom, conference call charges are invoiced to the account of the customer who books the conference call. For *dial-in calls*, the conference charge is 22p per participant per minute. There is no call charge and there is no charge for the participants. For *dial-out calls*, the conference charge is 22p per participant per minute and the call charge is 26p per participant per minute (in UK, but more if on mobile or overseas). There is no charge on other participants' accounts. Various user packages are available for occasional, regular and frequent conference users.

Use of Audioconferencing in Psychological Services

Audioconferencing is being used routinely by Psychological Services in certain areas of Scotland. A comprehensive picture is not currently available.

Advantages

- Audioconferencing enables two or more individuals to communicate at any one time.
- Communication is instantaneous.
- There are cost and time savings which is a particularly important factor in those geographical areas where long distances are involved.

Disadvantages

- Only audible information is communicated.
- Non-verbal modes of communication are lost. Visual communication may be the preferred mode in particular situations, e.g. in counselling situations; when demonstrating a particular technique.

Issues

- Where more than two individuals are involved, it is important to have tight chairing of meetings.
- Individuals need to remember to introduce themselves before they speak. It cannot be presumed that the listener recognises his/her voice.
- Agenda should be prepared in advance (can be faxed to members) to ensure the

most productive and efficient use of the time on-line. Although line charges have reduced, cost effectiveness is still an important factor in the use of communications technology.

- Some participants (particularly relative newcomers to method) like to create a visual replication of what is on the other side of the phonline.

Videoconferencing

Jim Kane and Elizabeth Hannah

What Do We Mean by the Term Videoconferencing?

Videoconferencing describes different products/systems which enable communication between individuals at remote sites. It covers a wide range of facilities from the use of person-to-person videophone through to the use of videoconferencing studios with expensive equipment and possibly staffed by technicians. Videoconferencing products often provide much more than just audio/video links (some of these facilities will be described later in this section). Nevertheless, the term videoconferencing has fallen into common usage and will be used in its wider sense.

Range of Videoconferencing Systems

At one end of the spectrum, a simple videophone providing audio and video communication can be used for one-to-one conferencing. At the other end of the spectrum, high-bandwidth connections are used with digital and analogue circuits to connect videoconferencing studios where groups of people at several sites can hold meetings. The latter systems are expensive to install and maintain and it is usually necessary to book in advance.

The least expensive option is where you use relatively low cost hardware/software packages which run on personal computers or workstations and can be connected by various means. This enables users to communicate from their office with others at a remote site using a standard PC with some modifications.

Videoconferencing Equipment

Current commercially available products for desktop videoconferencing usually consist of a package consisting of various hardware components and a set of software items.

Hardware

The components required will depend on the PC or workstation. Some may already be built in.

Camera

A small video camera which can be attached to the top of the workstation/PC monitor is required. The camera usually has a lens shutter which allows the picture to be switched off manually. Closing the lens shutter switches off the power to the camera on some models. Some cameras come with a DC power supply which must be plugged in to a separate 13 Amp socket. Multimedia PCs may have integral cameras. In more expensive systems, it is possible to have different cameras built in. One system in current use in the Highlands and Islands utilises two different types of camera each with a different function. An Object Camera is used so that "objects, documents and transparencies can be placed and viewed on screen" (Robertson 1999).

Microphone

It may be necessary to add an external microphone to the PC/workstation. These can be rather fragile and/or compact looking. Some PCs have microphones built-in.

Speakers

Speakers are often built in to modern PCs but they can be of poor quality. External speaker(s) will often provide better quality sound. An external amplifier may be required.

Audio unit

This " contains built-in microphone and speaker " (Robertson 1999).

Earpiece/earphones

These can be useful if the speaker quality is poor or if the equipment is to be used in noisy environments.

Video capture board

This is a piece of specialised hardware which must be installed in the workstation/PC. It converts the analogue video signal from the camera to digital data at a high enough rate to maintain a moving picture.

Network board

This might be an ISDN card (if videoconferencing is taking place over ISDN circuits) or an Ethernet card if TCP/IP is used (**N.B.** TCP/IP, which stands for Transmission Control Protocol/Internet Protocol, is the common protocol used to allow computers to communicate

with each other).

Products for different platforms will vary according to how many of the above components are already built in to the target workstation/PC. Many vendors will offer upgrade kits which consist of one or more of the above components. It is possible to link in a number of peripherals to a videoconferencing system/package. These could include scanners, laser printers and video cassette recorders (for recording conferences).

Software

These provide a means of controlling the various hardware components but also provide additional facilities. The following components are usually available.

Conference Manager

This enables the user to manage the conference.

Address Book

This is a tool which is used to manage potential conference participants using a list of addresses.

Audio

This controls the audio settings. The user is able to alter operating parameters.

Video

This controls the video settings. The user is able to alter operating parameters.

Shared Whiteboard

All the participants in the conference share a common drawing board. It operates as if the participants are facing a real whiteboard equipped with pens and pictures to illustrate ideas. There are tools to enable drawing of lines, text, shapes, erasure of part or all the drawing, highlighting, importing of images and other operations.

Shared Application

This feature allows a conference participant to open an application in a window. This appears on all the workstations in the conference. The initiator can drive the application whilst the other participants watch on their own screens. The other participants may be able to take control of the application and, if desired, keep control.

Methods of Communication

Local area networks

“A Local Area Network (LAN) is a combination of cabling infrastructure and/or hub devices which link computers contained in a building (such as a school) or a collection of buildings (such as a college campus) not separated by public land and less than a kilometre across.” (SOEID 1998)

In a LAN, the links between individual computers are made using cable. The type of cabling selected will depend upon the network protocols to be used. The most relevant for schools and colleges is *Ethernet*. The normal speed provided in a typical Ethernet system is 10 MBps (10 million bits per second). One of the advantages of using a LAN is that potentially it is a fast means of communication between the computers in the system. Another advantage is that it supports inexpensive multiway conferencing. Furthermore, if it is already available in a school/organisation, there are no installation costs. The main disadvantages are that constant communication speeds cannot be guaranteed and that with increased traffic demands, videoconferencing can become unusable.

Integrated services digital network (ISDN)

“The international telecommunications system for sending data over the telephone network. Data which can include voice, video and text can be transferred in digital format at high speeds. As the system is digital, there is no need for a modem, which is replaced by a device called a Terminal Adapter. ISDN can provide multiples of 64k bandwidth, which is described as medium band communication, in terms of bandwidth available ” (SOEID 1998).

ISDN2 is a version of ISDN which is offered by British Telecom. It provides two 64k channels to business and domestic customers in the United Kingdom. ISDN6 is also available. *“ISDN6 is basically 3 x ISDN2 lines. ISDN6 connections give improved audio and picture quality, better speech to lip synchronisation and greatly reduced moving image stagger”* (Robertson 1999).

The advantages of using ISDN are that there is constant speed of communication and there is a dedicated channel of communication for conference participants. The disadvantages are that special connections need to be installed by a telecommunications supplier and there will be on-going rental charges; multi-way conferencing requires extra equipment (multipoint control units); and that the lower speeds result in poorer picture quality (especially motion reproduction). The latter point has to some extent been addressed by the use of more lines (e.g. ISDN6) but we have still some way to go to achieve full screen broadcast quality video.

Use of Videoconferencing in Psychological Services

As described in the *ASPEP Survey* chapter, a *questionnaire* was sent to each of the local authority psychological services in Scotland. This questionnaire explored a range of aspects relating to ICT. One of the questions posed was:

Videoconferencing

Are you using this in your service? YES NO

If YES, how is it being used? (Please tick) Staff meetings

Case conferences

Other (comment)

Of the 27 respondents to the questionnaire, two indicated that it was available and was being used. One user indicated its use for case conferences; the other user ticked "OTHER" and indicated its use to communicate with island schools.

As a follow up to the responses to the questionnaire, managers of services using videoconferencing were contacted by letter and asked to answer the following two questions:-

Question 1

How is videoconferencing being used?

Question 2

What problems (if any) have you encountered?

Some of the points/comments made are noted below :-

Question 1

"To a limited degree for meetings where large distances are involved."

"Videoconferencing can be useful in situations where participants have not met before and in situations where NVC (non-verbal communication) is critical e.g. supervision or feedback on assignments."

Question 2

"Hardware breaking down."

"Need for strong chairing of meetings if all participants are to get their say. New set of skills required to be learnt."

Use of Videoconferencing by Project Participants

Over the duration of this project, several videoconferencing sessions were held. A number of benefits and drawbacks can be drawn from these experiences.

There are time and cost benefits where participants are based some distance from each other. It is particularly useful where non-verbal communication would be desirable. With the use of a fixed camera, videoconferencing can facilitate discussion of textual or diagrammatic data. The most sophisticated systems permit joint working on a document. Some new technical and keyboarding skills are required but these are well within the competency range of the educational psychologist of the late 90's.

Drawbacks can include poor technical links and poorly designed studio locations. Videoconferencing, like its partner audioconferencing, requires strong chairing. Whilst groups of up to thirty can attend a video lecture, interactive conferencing loses its coherence if there are more than six participants in a location.

In summary, videoconferencing does have a place within a modern psychological service. However, it is important to carefully weigh up its use in each anticipated situation. Perhaps another mode of communication would make more sense, for example, use of audioconferencing when visual communication is not essential.

References

Robertson E (1999) Video Conference Notes/Features Personal Communication.

SOEID (1998) Scottish Schools Using the Superhighways: ICT and Development Planning, Edinburgh, HMSO.

Bibliography

Morgan S and Thorp M (1995) Videoconferencing on Unix Workstations to Support Helpdesk/Advisory Activities: A Report to the Advisory Group on Computer Graphics, Liverpool, University of Liverpool.

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MIS Evaluation Checklist for Psychological Services

Section 1 - Hardware Specifications

Question	Yes	No	Details
What operating system will MIS accept? MacOs Windows 3.11 Windows 95 Windows 98 Windows NT			
Will it run from a server?			If so, what is minimum server specification?
Will it run on a stand alone system?			If so, what is minimum specification in terms of: Hard Drive space RAM Processor speed?
Can the MIS be backed-up?			
Which means of back-up can be used? Server 3.5 inch diskette Zip Drive DAT Tape CD			

Section 2 - Software Specifications

Question	Yes	No	Details
Does the MIS use an application program?			If yes, specify.
With which operating systems is the application program compatible? Apple Mac Windows 95 Windows 98 Windows NT			
Is it possible to operate both systems simultaneously?			
Is there a cost for the application program?			

Does the application take significant Hard Drive space?			
What version of the software is currently available?			
Has the application program been proved over a period of time?			
Is there technical support available as part of the package?			
Is this support time limited?			
Is there training support available?			
Is this training support part of the package?			
Is the training available on-site?			If not, where is it located?

Section 3 - Operating Specifications

Question	Yes	No	Details
Is the Database relational?			
Is the Database modular: i.e. can it link with other Databases?			
Does it support data transfer across Windows applications? MS Access / MS Word / MS Excel Lotus Applications FileMaker Pro			
Does the data set/field names conform to NMIS Project specifications?			
Is there an upper limit on the number of records held?			
Are confidentiality/security measures incorporated into the system? Passwords Varying levels of user access Restricted layouts Log of when records accessed / amended			
Does the MIS permit the drafting of statutory reports: e.g. RoNs?			

Are there user defined options / pop-up menus?			
Is it easy to create / modify these menus?			
Is there a facility to create customised reports / forms / letters in a graphics format?			
Is it simple to alter layouts / forms?			
Is a high level of expertise required to carry out modifications?			
Is it possible to index records: i.e. current / discharged files?			
Does the MIS have a facility to compute predicted dates based on existing field values?			
Does the MIS automatically provide a warning to the user if a given field value is reached or exceeded?			
Is there a facility to alter fields globally throughout the MIS?			
Is it possible to download limited data to other computers such as portables?			
Does the MIS permit Mailmerge process with existing word processing programs such as MS Word?			
Does the MIS allow for records to be sorted across any field with facility to carry out multiple sorts: Area, School, School type, Surname?			
Can information be analysed quickly: ease of performing a search / find function; facility to search over a range of field values?			
Can data be transferred to a presentation program such as a statistical package or spreadsheet?			
Is there any lose of format in this process?			

Section 4 - User Training

Question	Yes	No	Details
Is there a planned training syllabus?			
How long does it take to attain a basic level of user confidence?			
Is there an advanced users' syllabus?			
Is there a cost for training?			Cost?
Is there an accredited qualification for the training?			

Videoconferencing

Are you using this in your service?
If YES, how is it being used? (Please tick)

YES NO
Staff meetings
Case conferences
Other (comment)

.....

Voice activated software

Do you use voice activated software?
If YES, what kind?

YES NO

.....

Information and communications technology development plan

Do you have a service plan?

YES NO

Lease of computer equipment

Do you lease your computer equipment?
If NO, would you consider this option?

YES NO

YES NO

If YES, who is your provider?

.....

Staff training in ICT

Has there been training for staff in the use of ICT?

Clerical Staff
Psychologists

YES NO

YES NO

Other comments

Please use the space below should you wish to elaborate on any area covered in this questionnaire or any related area.

Many thanks for taking the time to complete this questionnaire.
Please send the completed form to Jim Kane in the enclosed SAE.

Internet Sites for Educational Psychologists

If the full address does not give access, then progressively delete subsections from the end of the address until you get to the parent site.

<http://www.canterbury.ac.uk/departments/teached/sen/xplanatory/xplan.htm>

[http://193.118.187.160/LIR/CURLAW.NSF/websearchall/\\$SearchForm?SearchView](http://193.118.187.160/LIR/CURLAW.NSF/websearchall/$SearchForm?SearchView)

legal cases

<http://www.findlaw.com/search/countries/uk.html>

legal search

<http://www.ncet.org.uk/cits/sen/sen.html>

NCET site

<http://www.rmplc.co.uk/eduweb/sites/acecent/index.html>

ACE site

<http://www.psych.bangor.ac.uk/DeptPsych/InternetPsychology.html>

Bangor link to Internet Psychology

<http://www.inclusive.co.uk>

A useful semi-commercial reference link for special needs and IT

<http://med-aapos.bu.edu/aapos/pedires.htm/>

A useful reference on visual disabilities

<http://www.innotts.co.uk/~cilinn/epsweb.htm>

Nottingham EP's site

<http://mail.bcpl.lib.md.us/~sandyste/school-psych.html>

USA School Psychology Resources

<http://www.udel.edu/bkirby/asperger/>

Asperger Syndrome home page

<http://www.familyvillage.wisc.edu/specific.htm>

Large and organised disability/link reference

<http://www.york.ac.uk/inst/ctipsych/wen/CT/Links.html>

York University Psychology reference site

<http://cs6400.mcc.ac.uk/copac/>

On-line searchable catalogue of university research libraries

<http://www.w3.org/pub/DataSources/bySubject/Overview.html>

WWW Virtual Library

<http://www.dfes.gov.uk/nc/>

The National Curriculum in electronic form

<http://journals.eecs.qub.ac.uk/BPS/BritishPsychological.html>

BPS Journals electronic index

<http://stepstn.com/nord/db/dbsearch/search.htm>
NORD list of rare disorders

<http://www3.ncbi.nlm.nih.gov/Omim/searchomim.html>
OMIM database re: genetic disorders

<http://www.autism-society.org/packages/pdd.html>
Autism Society (additional reference)

<http://thearc.org/welcome.html>
The ARC: learning difficulties organisation in the USA

<http://www.nahat.net/gate1.htm> bio
NHS Trusts link site

<http://www.epi.bris.ac.uk/rd.publicat/dec/>
Wessex NHS evaluation reports re: medical treatments

<http://www.upsu.plym.ac.uk/infoserv/drugs/>
Drugs, Solvents and Intoxicants

<http://roads.omni.ac.uk/alphalist.html>
OMNI group site

http://www.atlas.co.uk/dlf/lit/_help/cont.htm
New "Disabled Living Foundation" site

<http://sargon.mmu.ac.uk/RINDEX.HTM> top
A useful disability index reference

<http://www.nfer.ac.uk/welsh.htm>
NFER site

<http://www.tes.co.uk;8484/tp/9020479/PRN/edition.html>
Times Educational

<http://thesis.newsint.co.uk/news/thesispages/home.html?10019082>
Times Higher Educational

http://www.audit-commission.gov.uk/com_serv.htm
Audit Commission

<http://www.nlm.nih.gov/nlmhome.html>
US National Library of Medicine

<http://wwwindex.nlm.nih.gov/index/nimindex.html>
US National Library of Medicine Search

<http://www.neuroguide.com/>
Neurosciences on the Internet link site and database

<http://indy.radiology.uiowa.edu/Misc/Search.html>
"Virtual Hospital" site

<http://box.argonet.co.uk/users/swepfas/index.html>
Swansea EPS Link site

<http://copac.ac.uk/copac/>

COPAC Search

<http://education.indiana.edu/cas/diads.html>

School drug prevention programme US Dept. of Education

<http://www.mic.ki.se/Diseases/alphalist.html>

Useful index for diseases

<http://www.cs.umn.edu/Research/GIMME/ISAP/welcome.html>

Drugs information

<http://www.nfer.ac.uk/emie>

Education Management Information Exchange

<http://www.inclusive.co.uk>

Inclusive Technology; linksite and summaries

<http://www.rmpic.co.uk/orgs/nagc/index.html>

National Association for Gifted Children site

<http://www.scope.org.uk/>

SCOPE site re: Cerebral Palsy

<http://inclusion.uwe.ac.uk/csie/csiehome.htm>

Centre for Studies on Inclusive Education

<http://www.official-documents.co.uk/menu/ukpinf.htm>

New Official Documents Site (very useful)

<http://www.metafind.com/>

this is a metasearch engine which takes a query and issues it to the other usual search engines (eg Alta Vista, Web Crawler etc). The query is then returned as a grouped set of references.

<http://www.lawreports.co.uk>

The Incorporated Council of Law Reporting - recent and current case reports

www.teachers.org.uk

NUT policy etc

www.ncb.org.uk

NCB

candp.ncb.org.uk

NCB "Children & Parliament"

<http://www.shef.ac.uk/misc/personal/edfmp>

Sheffield University

<http://www.sens.demon.co.uk/index.htm>

The Special Educational Needs Service

<http://www.sens.demon.co.uk/snap.htm>

SNAP (The Special Needs Association for Parents)

<http://www.sens.demon.co.uk/aut.htm>

The National Autistic Society

www.rnib.org.uk/parents/welcome.htm

Parents' Place

<http://www.hmso.gov.uk/acts/acts1995/1995050.htm>

The Disability Discrimination Act 1995

<http://cil/gcal.ac.uk/indserv/Legislation.html>

A Summary of the above from Disability Net

<http://www.connections.gcal.ac.uk.info/government.html>

Central and local government web sites

<http://www.tagish.co.uk/local/>

269 Local authority sites at TAGISH UK Local Government

<http://dspace.dial.pipex.com/town/square/ae208/>

The UK Disability Equipment Register

Dis_Scot.gcal.ac.uk/

Disability Scotland's Information Server

<http://www.netcomuk.co.uk/rtusler/updhome.tml>

Newsgroup uk.people.disability

<http://www.webcom.com/impulse/list.htm>

Disability related mailing lists

<http://www.connections.gcal.ac.uk/>

Connections Disability Web Site

<http://www.bids.ac.uk/welcome.html>

BIDS (Bath Information Data Services)

<http://www.apensys.com/eric/>

ERIC (Education Resources Informaton Centre)

<http://ericir.syr.edu/>

ERIC (Education Resources Information Centre) ASKERIC

<http://edrs.com/>

ERIC Document Reproduction Service EDRS

<http://matia.stanford.edu/cogsci/journals.html>

Psychology journals and magazines abstracted

<http://sorcier.soe.berkeley.edu/program/sp/html/journals.html>

School Psychology journals

<http://www.europe.idealibrary.com/>

The International Digital Electronic Access Library

<http://europa.eu.int/en/comm/dg22/violence/home.html>

Violence in Schools initiative

<http://www.cafamily.org.uk>

The CaF Directory

<http://www.europe.idealibrary.com>

International Digital Electronic Access Library

www.campus.bt.com

BT SEN Resource Service

.....
**PDP Project 1998/1999: Information Communication Technology Project
EPNET User Survey**

1. How did you find out about EPNET?
2. How long have you been using the service?
3. How often do you use the service?
Daily Weekly Monthly Less than monthly
4. How do you use the service?
 - To find out information from other EPs
 - To share information with other EPs
 - Simply to keep up to date with topics of interest amongst the profession
5. Degree of usefulness:
Not at all useful Slightly useful Useful Very useful
6. Please provide any other comments/suggestions about the service, in the space below:

How to Register with EPNET

In order to register with EPNET, carry out the following instructions:

1. Send an e-mail, with the following message as the only text (*typing your own names instead of firstname(s) and lastname*), to: **mailbase@mailbase.ac.uk**

join epnet firstname(s) lastname

2. Normally within a day or two you will receive a message acknowledging your request, and asking you to send another message, within seven days of your original request. If you are not a regular user of your e-mail system, or do not have ready access to a computer with an e-mail facility, this can be a problem. You have to remind yourself to log-on again to do this within seven days of your original request. Otherwise you have to start all over again with the original message.
3. You will now be registered, and quickly find your mailbox filling up with messages from other psychologists using the system. It is a good idea to open your mailbox on a frequent, regular basis (daily if possible), sift through the messages to find the ones you want to read/keep, and delete the others. If you do not do this, your mailbox becomes very large, very quickly.

To access the EPNET archive, where lengthy documents such as government publications and others of interest are stored, visit the website at:

<http://www.mailbase.ac.uk/lists/epnet>

or access the archive via e-mail to:

mailbase@mailbase.ac.uk

List of Participants

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