

Computer Applications in Social Work and Allied Professions

VOLUME 3

NUMBER 4

AUTUMN 1987

Using Computers to Plan Services for
People with a Mental Handicap

David Columbi's Personal
Computer Odyssey

Computer System Development in Lothian

Computers in the Dutch Social Services

Obtaining Extra Staff Using
Special Funding Measures

PLUS

Abstracts of over 130 papers
which will feature during the
HUSITA Convention

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Abstracts of over 130 papers which will feature during the HUSITA Convention

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CASW

ISSN No. 0267 1980

Advertising Address

CASW
 PO Box 52
 Stourbridge
 DY8 3NN
 United Kingdom

TEL: 021 356 6911 (ext. 303/301).

Editorial Address

Dept. of Social Work Studies,
 The University of Southampton,
 SO9 5NH.

TEL: 0703 559122 ext. 3536/2576

Subscription Rates (This Volume)

UK	
Personal	£8.00 per annum
Libraries & Institutions	£25.00 per annum

Europe	£UK
(Euro Cheques Please)	
Personal	£12
Libraries & Institutions	£30 (UK)

USA	US\$
Personal	17\$
Libraries & Institutions	42\$

Australia	US\$
Personal	17\$
Libraries & Institutions	44\$

Published by
 CASW Ltd
 c/o Dept. of Sociology & Applied
 Social Studies,
 City of Birmingham Polytechnic,
 Perry Barr, Birmingham, B42 2SU.

Up Front

Planning for Progress

It is embarrassing to make predictions which prove to be false within such a short time of making them, but almost before the printer's ink was dry on the last issue, I heard the news that the DHSS had withdrawn its plan to fund some computer research. Whatever the reason (and it appears to have been an internal restructuring of research priorities and organisation) several groups wasted a lot of time building up viable research proposals. More importantly, we are left with severely restricted opportunities for research into this vital subject area, and the leadership void in relation to technology developments in the personal social services has been exposed once again.

International Co-operation and Development

Can that void be filled? One way may be through the formation of an International Association for Information Technology. A proposal to set up such an organisation has been circulated by Stuart Toole of CASW and Dick Schoech, who edits the American journal, *Computing in Human Services*. Anyone interested is invited to contact Dick in Cardiff, where he has been spending the last year. He can be reached through the School of Social Work, POB 78, University College, Cardiff, CF1 1XL. The plan is to synthesize comments and circulate them at HUSITA 87 in September. If there are signs of support then at the end of the Husita conference a formal move will be made to establish an International Association. This will not wholly fill the void. Co-ordination across national boundaries will serve the enormously important purpose of promoting research, communications and technology transfer, but it will not provide leadership. Britain is already lagging behind other countries - not just America, but Scandinavia and Israel for example - and will fall further back if DHSS continue in hiding.

HUSITA 87

To change the subject, this is a special issue of the journal. It is volume 3 number 4, but it also contains abstracts of the papers to be presented to HUSITA 87. The response to the call for papers was massive - nearly 200 before they were filtered down a little. Even so well over 100 will be offered. Stuart Toole and Walter LaMendola, helped by a British advisory group, have organised them under nine topics:

- ☐ Information Systems and the Consumer
- ☐ Education and Training including CAL
- ☐ Empowerment
- ☐ Privacy, Information Ownership and Codes of Practice
- ☐ Technology Transfer and Third World Issues
- ☐ Direct use with Clients, Automated Assessment and Treatment Decision Making
- ☐ Networking and Electronic Communications
- ☐ System Design and Development
- ☐ Policy Development and Administration

However, rather than devote the whole issue to HUSITA abstracts, it seemed important that those coming to the conference (who will find a copy in their conference folders) should have the chance to see what the contents of a typical *Computer Applications in Social Work and Allied Professions* look like. Some might even be interested in the details of subscription!



Contributions to the Journal



Computer Applications in Social Work and Allied Professions welcomes articles, reviews, news items and letters from readers.

Articles should be from a minimum 750 words to a maximum 5,000 words.

Reviews of printed material or software should not normally exceed 300 words, unless discussed beforehand with the Editor or Review Editor.

All contributions to the journal should be typed or printed (draft quality is acceptable), double-spaced and single-sided. Please send three copies of articles and reviews.

The journal does not maintain a long waiting list of material for publication and those who have a contribution accepted can expect it to appear within the next two issues. Potential contributors are invited to contact the Editor or the Review Editor, to discuss a possible item.

Up Front

Featured in This Issue of the Journal

This issue of the journal is primarily concerned with the practical end of computer applications. Sheila Clarke tells us about the development of programs for helping plan the lives and futures of people with a mental handicap. The packages, now on sale, have been written and given field trials in Hampshire Social Services Department. Further along the south coast David Colombi, a senior probation officer in West Sussex, gives us an entertaining account of the difficulties facing anyone who wants to get involved in computing on a shoestring.

Searching for Resources

The theme of searching for resources to carry out computer developments is pursued by two contributors from Scottish projects who argue for appropriate and adequate resources, but just what does this mean in practical terms? It means either making a strongly argued claim for scarce money and staff, in competition with many other compelling demands facing agencies, or searching around for possibilities elsewhere, which represent additions to the overall resources of the agencies. In both instances the bids have to be backed by rational, objective analysis of the likely costs and benefits of new projects. Peter Ashe offers a casestudy of the development of a home care system which followed the regular stages of a project management schedule - feasibility study, cost/benefit analysis, critical path analysis, and so forth. In contrast Stuart Montgomery tells how progress was facilitated by attracting the interest of potential computer workers from a vocational scheme for disabled people. The stories are very different, but the themes and issues have much in common.

Computer Developments in Holland

The overseas interest is represented this time by an article from Hein de Graaf about computer developments in Holland, based on a fact-finding project he has undertaken during the last couple of years.

This issue will be published to coincide with HUSITA 87. It has been a slow business generating a wider commitment to computer applications in social work in Britain. CASW itself is already three years old. Everyone connected with the journal is full of anticipation that the international gathering will lead to a big step forward for a subject which is of such importance to the future of the personal social services.

Bryan Glastonbury

New Readers Start Here!

Many of you may be reading a copy of Computer Applications in Social Work and Allied Professions for the first time - we hope that just a simple glance through the pages of this issue will show you what you have been missing!

The CASW Journal aims to provide a range of both informative and challenging articles which examine the role of information technology in social services and the other human service professions. CASW features are written by those who are involved at the forefront of the computerisation of the human services and so write very much from practical experience. In addition each edition of the journal contains a leading feature from an international contributor. In this volume of CASW alone we have covered the following areas:

CASW Vol.3 No.1

Walter LaMendola from the University of Denver's Graduate School of Social Work looks at the issues and problems involved in developing software for the human services; Bryan Glastonbury (University of Southampton and CASW editor) considers the problems and pitfalls of managing the social services computer system; Paul Dolan and Elis Envall discuss the ethical dilemmas involved in protecting the privacy of clients in computer aided social work; Stuart Toole and Mike Winfield of Birmingham Polytechnic lay down their thoughts on Expert Systems and their implications for social workers and the FidoNet communications system is introduced.

CASW Vol.3 No.2

Peter Marsh, Bill Ormerod and Jane Roberts from Coventry Social Services describe the Coventry Social Services Department's experience of introducing I.T. into the department; Birmingham Polytechnic's Harvey and Baggott carry out a thorough review of four Expert System Shells - Micro-Expert, Expert-Ease, ES/P Advisor and apes; Fritz Gruendger from Berlin considers the implications of computer applications in social work education and Victoria Weavers, a social worker at Warley Psychiatric Hospital asks "can computers do social work"?

CASW Vol.3 No.3

Bryan Glastonbury asks why has the software boom by-passed social work?; the CUSNet (Computer Use in Social Services Network) electronic communication network is introduced; Dave Arber, a consultant in computer uses for people with special needs, shows how computers can be of use to the sufferers of Alzheimer's Disease; David Challis, John Chesterman and Robin Saunders provide different perspectives of the same computerised record keeping system in Kent; Alistair McNicol describes how Strathclyde Social Work Department is making use of the Themis Viewdata system and from the US Sharon Kava and Walter LaMendola consider how modern telecommunications can help develop rural social work.

The four issues which make up this volume of CASW are available by subscription - see rates on inside cover

A Micro-Menu for Macro-Planning

Sheila Clark

The Use of Computers in Planning Services for People with a Mental Handicap

Introduction

It is now some four years since the first IBM PCs were installed in three pioneering Training Centres for people with a mental handicap in Hampshire. The intervening years have seen many teething problems resolved and a great deal of software development. Now all twelve Training Centres have IBM PC (or equivalent) microcomputers. Two centres are taking part in a pilot scheme linking their PCs to the HQ mainframe by modem. The Research Section of the Social Services Department has played a major role in the design and development of specialised software packages to the management team's specifications. Software is currently being used in the planning and administration of the service on three levels:

- Individual client assessments/plans
- Units
- HQ

Microcomputers are also being used by clients in individualised computer assisted learning packages.

The aim of this article is to concentrate on current computer applications at these three administrative levels and also to outline some future plans.

The emphasis of the article is the role of microcomputers in planning a needs-led service for people with a mental handicap. There follows an overview of all the applications in diagrammatic form. Subsequent sections examine in detail the particular applications at individual client assessment level, unit level and HQ level. A small section reports briefly on the use of microcomputers by clients and the article concludes with future plans for applications.

Planning

There are over 4,000 people with a mental handicap in Hampshire, all with individual day and residential service requirements. The range of needs, opportunities and support implicit in such requirements is vast. Philosophically, the mental health service is committed to a client-centered, needs-led service. In practice this is achievable by the use of computers to store large numbers of individual needs and also to prioritise needs for service planning.

Computers have eased the transition from a resource-led service by their ability to handle large amounts of detailed information at high speed, and thus use individual assessments and plans as the basis for providing a County-wide service. This also helps ensure that finite resources are allocated as efficiently and effectively as possible.

Figure 1 illustrates how microcomputers can operate at three system's levels and thus link individual client needs to HQ planning and budgetary cycles.

Level 1: Individual Client Assessment Plans

HANC

HANC is an assessment and curriculum planning system. It is essentially a decision-making tool which uses individual assessments to determine training priorities for clients. The training priorities are identified by looking at levels of independence and by gauging the ease and importance of developing skills for individuals. HANC on disc is a compiled Database III package which can be used on the IBM PC, or compatible, machines. The

program has two main functions - to store large amounts of information on individuals and to manipulate this information in a wide range of standard and ad-hoc interrogations. Storage of information is very similar to the current paper system, but has one or two extra facilities. Assessment information can be entered quickly on the ten core skill areas, which are then broken down further into some 300 skill items.

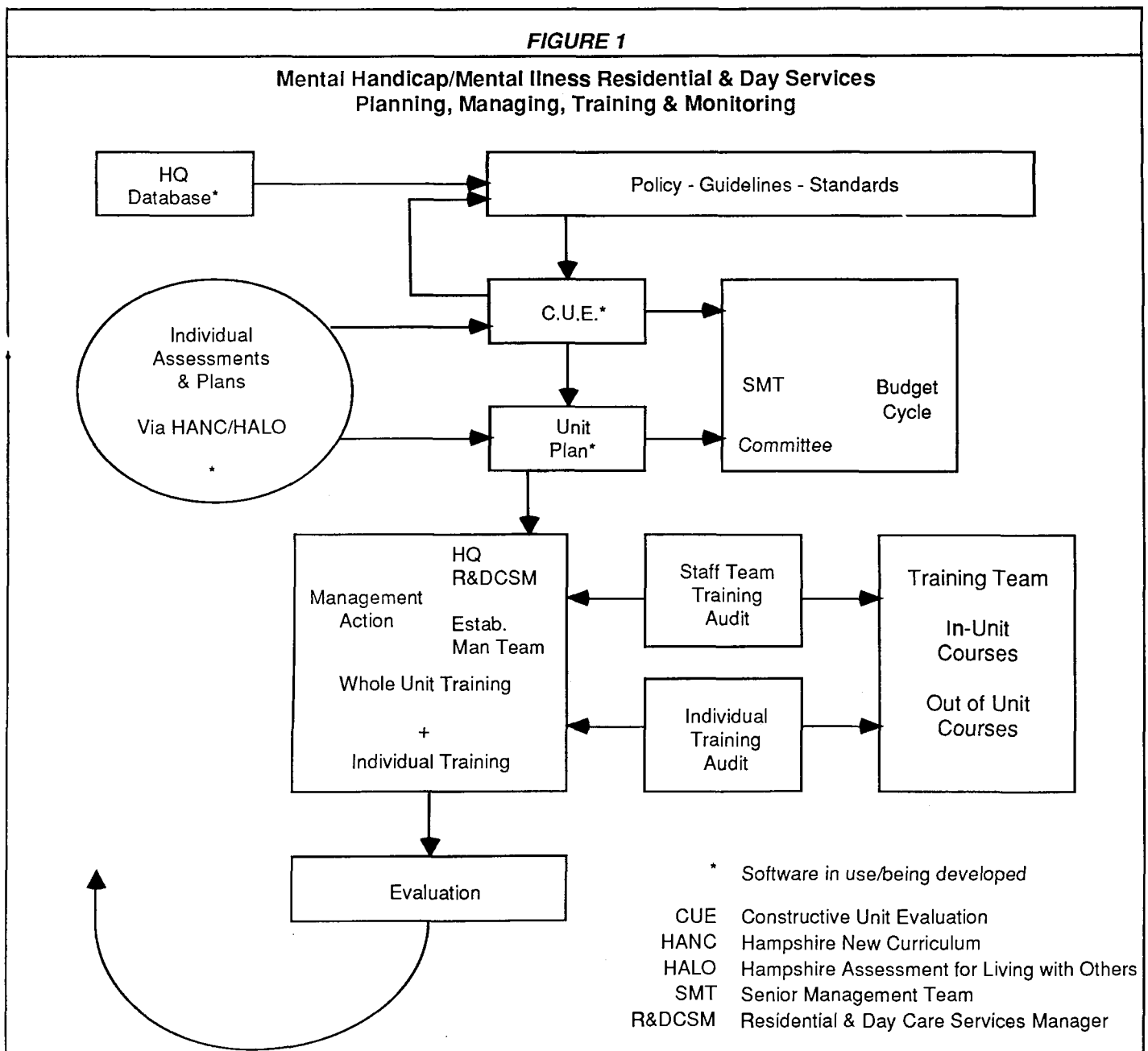
However, the HANC program also has the advantage of being able to add extra skill areas or more detailed skill items by altering the form structure of the assessment system. This makes it a flexible assessment process which can be adapted to personal requirements. Level of priority, type of training programme, independence level and start-finish dates are recorded for each assessed item.

Interrogations allow priorities to be listed for either individual clients or skill areas. Standard interrogations also list IPP (Independent Program Plan) items by individual or whole centre; list priority items in rank order; list percentages of priority items attained and also provide an alphabetical list of clients. Using the paper system, a Manager of a 130-place unit took approximately six weeks to collate individual HANC assessments and organise training priorities into a curriculum and activity programme for his centre. He has subsequently done the same task on microcomputer in less than one afternoon - with the added advantage of leaving the machine to get on with the task! Needless to say that newer machines are quicker still! Updating information is a relatively simple process too, making the use of assessment information for individual plans, reviews and statements of the straightforward.

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HANC on microcomputer was initially developed three years ago to increase the flexibility and data-manipulation of a successful paper assessment system. The original specification was written by the author of the paper system, Michael Shackleton Bailey. The current software has been developed from this original specification and modified after piloting in 3 Hampshire Training Centres.

There are over 4,000 people with a mental handicap in Hampshire, all with individual day and residential service requirements



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Many modifications were reflected in faster, more direct access to data and increased user friendliness. Much of this developmental work was eased by programmers and Information Systems Officers from the Social Services Department's Research Section.

Direct contact staff received training and support by these personnel in the Research Section, as well as from the Mental Health Managers.

This model has subsequently been adopted in more recent software developments, as it greatly assisted in communicating the needs of the users to the people who were actually involved in developing the software.

Software Development

We have been fortunate in being able to develop software in this way as the benefits of knowing the client group and staff involved have, undoubtedly, contributed to the end product and the continued support in using the software and the speedy smoothing out of "hiccoughs". (In particular, Susan Hitchcock for systems software development, Alan Jones for hardware and Peter Ryan for programming, have been enthusiastic and co-operative in following this model - although all three people seem to be systems analyst-programmer-trainer-user support-system adviser hybrids!)

HALO

HALO is a residential version of HANC. Similarly, it is an assessment and planning tool for individuals and groups. It has an equivalent range of items and similar interrogation facilities. Piloting of this software should be completed during May 1987, when the new versions of HANC and HALO (with manuals) will be available for use on IBM PC (or compatible) machines.

Levels 2 & 3: Units and HQ

CUE and UNIT Plans

At unit level too, a system was required which would identify and prioritise future service developments. CUE stands for Constructive Unit Evaluation. The acronym CUE also neatly describes the function of the completed process, as it acts as a prompt for action. CUE systematically appraises individual units and identifies areas where assistance is needed in the form of policy, guidelines or standards, resources, management action and training.

CUE is structured into 12 main themes with about 80 specified items for evaluation. Neither the themes nor the items are intended to be mutually exclusive or exhaustive. The individuality of units can be reflected in expanding the form structure of CUE and, again, this is more easily achieved on disk than on paper. The CUE program is currently ending its experimental phase and will be available to all Hampshire units from 1st June 1987. The CUE program is also used to produce individual unit plans. Individual Unit's CUE and Unit Plan disks can be 'pooled' at HQ in order to establish both local and central service plans.

The development of CUE was again based on transferring a successful paper system on to disk. The advantages are obvious ones of speed of retrieval and updating, as well as greater possibilities to manipulate/interrogate large chunks of information quickly.

At the time of developing this software, our Research Section had something of a manpower crisis, in that we were bidding for large chunks of programming time which could not always be provided. Timescales slipped, and continue to do so unfortunately, with competing demands on

programming time. This particularly seemed to effect modifications required after field trials, but frequent discussions with the Information Technology Manager in the Research Section now mean we are more able to gauge the hours involved in projected completion dates - this works so long as the goal posts don't move more frequently than our discussions take place!

It is planned to use CUE and Unit Plans more concretely and centrally next year to help identify service "deficits", required resources, training, etc., which can be quantified into budgetary bids.

Individual Training Adults

The needs-led service for people with a mental handicap is also reflected in staff training requirements. The individual training audits are part of a paper system currently in the first year of operation. The purpose of a training audit is to ascertain individual staff training needs and to provide a plan to offer training opportunities to staff members. Courses and other training opportunities can then be designed which most closely meet the needs of staff members' training priorities. A complementary software package has been further developed in order to identify individual, unit-based and HQ-based training priorities.

The paper system is more detailed than the disk system in this case, as the paperwork allows an individual staff member to collate a file of information on past experience, qualifications, courses attended, comments, etc. The computerised version is based on the individual staff member's profile which identifies this year's training needs in order of priority and also holds information on training received last year and the future needs. Although the program is available to Units, it was really developed to help the Mental Health Management Team work with the Training Section in designing

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individual training pathways and in planning training across the County. The software currently holds information on training priorities for all Mental Health employees (about 500). Interrogations will allow rank ordering of training needs and so will ensure that we can plan to offer high priority training across the County, as well as enabling us to make sure that priority individual training needs are met. We plan to make more use of this software to link with 'out-County' training, so that we can respond quickly to advertised courses, knowing that attendance is not one of chance, but part of an individual staff member's training pathway.

An implication of this system is a commitment (both in principle and financial terms) to meeting the training needs identified. To this end, the Training Section have negotiated for a much enhanced training budget and extra training personnel. We are optimistic that it can be done - time will tell!

Databases

Joint working and planning with six separate Health Districts recently highlighted the desirability of a shared database/client index. For service planning on a local basis, as well as on a central basis, accurate information on present and future service users is essential. A simple statement of who potential users are, where they need a service, what sort of service and support they need, has been incorporated into a demographic database and is compiled across the County.

Two additional sub-databases are available to give more detail on individual service requirements - one for day to day service needs and the other for residential service needs. All three were produced in collaboration with colleagues in the Health Service. Updating is done locally after individual reviews, circumstance changes, etc., but this remains a less than perfect process at present and a better process is being

discussed and developed. One large subnormality hospital is using the database(s) as an aid in relocating people with mental handicaps into the most appropriate day and residential services.

At HQ we plan to use the demographic database increasingly to identify shortfalls in services and to plan more effectively for people moving into the service. Essentially, this is locally held for ease of updating, but is really a crucial tool for the central service planning of new residential and day services. Getting the information together has taken quite a lot of time and effort and would not have been successful without the commitment and

Client Use of Microcomputers

The use of assisted learning packages is a very familiar sight to those working in education and training spheres. The potential for use with people with learning difficulties has been explored in recent years and specialised hardware and software developed. Many of the training centres in Hampshire now have more than one BBC microcomputer for use by clients. The advantage of the BBC for teaching purposes is largely due to the range of software available. A Working Party comprised of representatives from every training

One difficulty in establishing the database was the need for absolutely accurate information fairly quickly

co-operation of Unit Managers. There were also one or two bugs in the software which had not been spotted in earlier trials, which meant restarting the exercise in some Centres. The database is now complete for the day service; the residential side will not be so easy, as only one (out of twelve) hostels has a microcomputer. However, it is planned to tackle both the software and the hardware aspects of the residential database in the second half of 1987.

Next year we will be able to create a five year development plan derived from the updated database. One difficulty in establishing the database was the need for absolutely accurate information fairly quickly. Where relationships and channels of communication were good interagency, this was no problem, but the task should not be under-estimated where this is not the case.

centre has been operating for some time now to evaluate the software currently available and also to set up a central resource library - whose catalogue will naturally be on disk!

We have been most grateful to colleagues in Education for the assistance in extending client use of microcomputers. An early problem was one of the age-appropriateness of some of the training packages, but this is largely resolved now. Links with local colleges, Adult Education Institutes, etc. have enabled many clients to experience working with computers. Apart from the use of the specified program, there have been many other successful spin-offs for clients, including individual attention at own speed and level, stimulating use of colour and sound in teaching, high levels of success leading to greater interest in learning,

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unquestioning patience by computers, immediate feedback, etc.

Possibly the most encouraging use of micro computers is that by clients with profound handicaps who can now experience control over their own environment by the use of concept keyboards and special switches like micromikes and photonic wands.

Other Issues

1. Expense!

This is an expensive business, but falling prices and increasing competition is making it less so. Moreover, many of our staff, convinced of the cost-effectiveness of the use of new technology, both for administrative and teaching purposes, choose to purchase microcomputers from their own budgets.

2. Staff Training and Support

Staff training is essential. Some people remain anxious and apprehensive about using computers, and there is a need for training at both consciousness raising and specific skill levels. The use of 'games' can help with keyboard skills and fear of making mistakes, whilst teaching staff to use specific software packages can assist them in their day to day work, e.g. word processing, assessment, etc. After initial training, 'hands-on' experience and continued use is important to staff - as is support from both trainers and the software designers. We have found training to be most effective when tackled gradually, in small groups and in response to levels of interest and potential use of microcomputers - hands on experience being crucial at all stages.

3. Future Plans

HALO (the residential equivalent to HANC) has been developed and piloted on disk and it is hoped to start establishing microcomputers in the remaining hostels soon.

Link-up to the mainframe

Following the current trials this project will give all units access to the mainframe at Hampshire County Council's headquarters and will include administrative functions like electronic mail and ordering, as well as additional software packages.

Additional Software

To be developed, particularly for guardianship and out-county placements.

Database

Develop use for service planning, both within Social Services and also for joint planning initiatives, like care in the community.

Client Use

Continue to develop and extend these opportunities, especially for people with profound handicaps.

Summary

We have developed computerised systems in the Mental Health Sector over the past four years which have had a major impact on the service we offer to clients. Only by the use of computers have we begun to be able to use client needs as a basis for service planning.

Microcomputer applications for: client Assessment, unit-based services and HQ planning (as well as more directly in use by clients) are all in operation, with plans to develop them further. It truly continues to be a micro-menu for macro-planning.



Sheila Clark is a
Psychologist with
Hampshire Social Services
Department

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CUE
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(Hampshire Assessment for
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Social Services. 1980.

HALO on Micro
Hampshire Social Services. 1987.
Price £85.
(Versions available for single, twin and
hard disc IBM PC compatible machines)

HALO on Micro: Users Manual
Hampshire Social Services. 1987.
Price £3.50



A Computer Odyssey

David Columbi

or

"Why do people keep telling me to get an Amstrad?"

Introduction

Probation Officers, like Social Workers, tend to be suspicious about computers and all their works - from fear, ignorance, common sense or informed experience. When, however, we had a "hands on" awareness day some years ago it transpired that many Probation Officers, or their children, already owned home computers and over the years a few colleagues have sought my advice about what to buy - usually in January when last year's accumulated pay increase finally arrives and playing with a home computer seems a more attractive proposition than redecorating. On such occasions I try to give informed and balanced information about the options and usually end up confessing that I haven't really a clue but there may be something really good coming on the market soon. The truth is that after several years of furtive purchasing of computer magazines, and using different machines I am as baffled as ever.

My hope is that sharing my experiences of a personal odyssey through the world of the micro from home computing to a more "professional" use may offer a cautionary but not off-putting tale for the non-specialist and a chance for the more knowledgeable to be justifiably smug. It's about applications as well as machines and, as with all journeys, it has been a story of change in the way I have seen things as well as in what there is to be seen. There may or may not be a moral to the tale but it eludes me at the present.

The Arrival of the Home Computer

The arrival of the tiny Sinclairs ZX80 and ZX81 first heralded the home computer market but I was cautious in

those days and waited with mounting excitement for the launch of the BBC model A with its "massive" 16K memory. I thought understanding and using a home computer would be easy enough; after all I had worked in the distant past as a computer programmer for the Ministry of Defence. That job came to a sudden end over a disagreement about putting up anti-Vietnam War posters on my office walls, but that's another story. What I was now overlooking was the simple fact that I had not then known or learnt a thing about computers, not that it seemed to matter overmuch at the time or even to be noticed.

The computer we had used, called AMOS, filled a large room and required an occasional judicious kick at ground level about six feet along the second aisle (another official secret out). AMOS probably had about 16K too but we soon took to using COSMOS, its replacement, that sat on a desk in the corner, with AMOS brooding behind like an unloved and unwanted metallic alp. The real lesson was not that computers get smaller and better, but that you can never get rid of the old one. I've still got the BBC machine as my son assures me his educational future depends on it. He uses it in fits of enthusiasm between bikes and canoeing and as a strategy for avoiding homework, "I'm doing something educational", as another pangalactic invader is fragmented in outer space. My best achievement was to use a flight simulator programme to crash land a stationary Jumbo Jet (a simple matter of raising the undercarriage).

BBC machines have gone out of fashion now but I thought and still think it was a smashing machine, which even survived some crude soldering endeavours to upgrade it to a 32K model

and adding a word processing chip. It gave me the enthusiasm for writing and using programs and a sense of wonder at the magic of its inner workings. Understanding those inner workings was another matter, but I learnt enough of programming in BASIC to start to write programs that helped at work in analysing work trends and producing colourful if not very sophisticated graphs and barcharts.

Programming

In the process I also learnt that much of what programming is about is not the technical knowledge of, and the skills in use of the programming language, but the necessity of sorting out what precisely you are trying to do. I became aware of the extent to which everyday language, even when used well rather than sloppily, makes many assumptions about shared knowledge to convey meaning.

A recurrent experience was, and still is, to assign one variable to an item (such as the definition of the team) only to find that you need to assign two or three more to cope with the variety of ways we use it in practice. In that sense programming can have its benefits in helping clarify what we are trying to do, but it also requires an attitude of mind, a perverse and finicky obsession with trivia as one discovers an amazing talent for making and repeating minor errors. I'm told that computers beat people at chess mainly because they spot silly mistakes that would be missed by human opponents.

The troubles with the BBC were the usual ones of not enough memory, the cost of software, slowness of loading programs from tape, the cost of buying interfaces and disc drives, compatibility issues and, for me, the problems of

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portability between home and office with all the messing around with a tangle of different leads. Meanwhile my service had bought a Commodore PET to run the PROBIS (PROBation Information System) program that the Home Office was dishing out free to Probation Services, and it seemed that some of my problems would be solved by buying a Commodore 64 for use at the office. This was primarily to develop use with clients in an adult literacy context and in a drop-in centre, and the experiment convinced me of the relevance of this, even given a lack of good educational software and again no disc drive.

Linking the Commodore for data exchange was not easy and, although possible was abandoned, not least because of the expiration of the PET at headquarters.

Connecting Separate Worlds

The problem it seemed to me was that there were separate worlds of computer activity going on of relevance to the Probation Service and to Social Work with no apparent connection between them. These were:

- ☐ client information systems for management where our service, a small and under-resourced one, was a late arrival
- ☐ extensive use of sophisticated computer systems by the Courts, Local Authorities and the Police
- ☐ development of client applications on micros (mainly the Sinclair Spectrums, BBC and Commodore) particularly in I.T. and day centre projects.
- ☐ largely unexplored worlds of potential computer application and database resource power to professional social work tasks, except in certain areas such as welfare benefits.

Developing an Integrated Approach to Computer Applications

Having identified some of these features it then became apparent that there was more going on than I had realised in each of the fields, but little attempt to bring them together in a co-ordinated approach to develop use of computers in a way that could benefit managers, staff and clients alike. The next move was to start on a part-time research course to look at ways of developing a more integrated approach to computer applications, although the focus of the work was somewhat vague at the start. I have become interested in ways of starting to fill the gap between client applications and management applications, including local office uses, learning and assessment programs, expert systems and access to national and local databases. I also wanted programs for non-specialists to be able to use easily, and it seemed to me essential that we should aim to have one system of compatible computers.

In practice the microdrives worked perfectly, although I found it unnerving that they seemed to have a life of their own, whirring into demented action for no apparent reason. The real excitement though was having some good software for the first time, and I got on with the business of using a decent word-processor, spreadsheet and data base, and particularly enjoyed having a graphics program. These were times of heady excitement, perhaps not imaginable to those who are used to such things and take them for granted.

Upgrading to MS-DOS

The QL however was not the only machine falling in price at that time and when the Apricot Portable appeared locally for less than a third of its original price, and the shop was willing to take the QL back at full price in exchange, this at least seemed the chance to get on to discs, to the MS-DOS standard and to a proper portable in one move. A chance windfall made this possible, and so with feelings of

**After a while you need to settle down
with one machine, to show some loyalty,
to reap the benefits of familiarity
and put aside one's fickle, feckless past.**

For such ambitious stuff I clearly needed (or merely wanted) a new computer to overcome the tape and portability problems, and just at that time the Sinclair QL was halved in price. It seemed a snip with the bundled software; it looked good, and was very compact, so I thought I would see how I got on with the dreaded microdrives. After all, the portables with discs seemed to start at £1,500 and even the QL meant stretching the overdraft or selling one of the children (you can get reckless when you set your mind on a new micro!).

treachery and betrayal in my heart I put the QL back in its box and abandoned it for another model.

What I quickly discovered with the Apricot was prejudice. Whenever I spoke to computer dealers (usually seeking advice) and confessed to having an Apricot Portable, the look was invariably one of disdain, pity or incredulity as if one had confessed to having herpes or a Barratt House. Well, I've still got the portable and I like it, even if the word-processor is clumsy, there is no graphics program and the

A Computer Odyssey...

database is very limited. What I have been able to do is write and start to use a research program with its own statistical analyses and graphics and to write or adapt some programs for alcohol and monitoring assessment, expenses claims and a client game ("Crisis"). The next stage is to try to adapt (with permission) some of the existing BBC client programs to the MS-DOS environment and to explore expert system (is 'semi-clever' a better term?) possibilities in the report writing context.

IBM Compatibility?

However there is still a dilemma, which I have put in the title to this piece: Why does the editor of this magazine, amongst others, keep telling me to get an Amstrad PC? After all he's not prejudiced and I don't think he has shares in the company - in fact, of course, he's really arguing for going for IBM compatibility and the Amstrad PC1512 is the cheapest way there. I'm all for compatibility but the pros and cons of this argument seem to be worth exploring a little as a general dilemma about the present state of computer development.

The pros of changing are at first sight obvious:

- ☐ swapping programs and data with other users and access to the vast array of IBM standard software (some of it free).
- ☐ the dramatic effect of the Amstrad PC on IBM compatible software prices - one integrated package was recently quoted as coming down in price from £2,000 to £86. Apricot software remains high in price.
- ☐ support for users from magazines (Apricot have long since abandoned purchasers of their portable).
- ☐ the Apricot is portable between offices and home but it is not like a battery powered lapheld. Just

carrying discs between machines may be a better bet.

- ☐ dual disc drives or hard discs options (actually it is only when copying discs that I find a single disc is a problem).

The main arguments against, apart from the obvious one of cost, are:

- ☐ Why change to inferior discs - the three and a half inch discs are far pleasanter to work with than the five and a quarter inch ones and hold more - 720k. Besides, I've bought a lot of them.
- ☐ The Apricot has a lot of nice features that I like - it's compact, has an infra-red keyboard, voice control (a bit unreliable and a limited vocabulary) and a program for converting BBC basic programs to Microsoft basic (most of the time). Next week I start trying to use a piece of free software (Kermit) to swap programs and data with an IBM machine. I only hope it works.
- ☐ A feeling of why should it be necessary? If computers can be so advanced in so many ways why is compatibility such a problem? Is it entirely a real one or in part an artificial one that there are too many interests against it? Is it really impossible in theory to have BBC basic used on a MS-DOS environment so that all the educational and client programs written for the BBC machines could be transferred to be used on MS-DOS based machines? If computers can output to a whole variety of printers, is it impossible to output to other machine's disc formats? Maybe it is, I just don't know.

Yes, I think I'll carry on with the Apricot and use it for doing my research and carrying on developing programs

that hopefully can be transferred for use on the IBM compatibles. It does mean being a bit restricted in the programs I can buy, and I really had quite fancied a go at some desk-top publishing. Maybe in a year or two I'll think again about changing, but by then the rest may have come round to the virtues of the smaller discs. [IBM has, at last! - Ed]

Machine Loyalty

After a while you find you need to settle down with one machine, to show some loyalty, to reap the benefits of familiarity and put aside one's fickle, feckless past. Mind you, the new Sinclair Z88 portable looks interesting. Perhaps if I can sell both the children and the Apricot I can get that, an Amstrad and a modem. Perhaps the real truth is that micro-fever is an incurable, progressive and debilitating disease. If so, it's quite a pleasant one.

So there it is - one person's experience to date. It has been one of frustration and false starts at times, but also of excitement as I think we have only just begun to explore this area of work. At times, when tediously rewriting a whole section of a program, I've felt like one of the early experimenters with electricity who had to wind cotton laboriously round each length of wire when insulation was needed. I wonder what they would have thought of a modern micro?

David Columbi is a Senior Probation Officer in the West Sussex Probation Service, based at Worthing.

He is currently undertaking research into 'Computer Applications in the Probation Service'.

Resourcing Computer Development: Learning as we go in Lothian

Peter Ashe

Context

In Lothian Social Work Department (SWD) we have followed a broadly rational model for developing computer systems - in this case a system which is intended to integrate home help service allocation with the production of home help pay input data and client invoices. Corporately the proposal to develop this arose from the SWD at the same time as external management consultants were reviewing various aspects of Regional Administration. Their report said some fairly direct things about the way we undertook system development, and as one of the first big systems to be taken up within the resulting new climate, the home care project was always likely to be injected with a dose of rationalism. The SWD - or at least those involved in planning - had meanwhile absorbed the received wisdom about project management from the LAMSAC 'Paths' document (1). Also the particular systems analyst originally assigned to the project within Computer Services had a definitely methodological approach to project and system design, cost-benefit analysis and structured programming.

We have passed several resource mileposts along the way, and the sections below discuss each in turn:

SWD User Requirement: Establishing a Project Team

A year or so before the decision to set up a Project Team, the Departmental (O & M) 'systems team' had carried out a detailed description and analysis of home care administrative systems (2), and though this was not implemented at the time, it provided a wealth of useful material and ideas for subsequent work. It was a direct source for much of the initial appraisal carried out by Computer Services. On the basis of this initial appraisal (we were shy of calling it a 'feasibility study'), the Computer Services project manager concerned, his

systems analyst and I first planned our requirements (3) for SWD staff input (who should be involved, contributing what sort of knowledge and expertise). The systems analyst then drafted a User Requirement production schedule (4) using his systems methodology. This schedule simply itemised the specific tasks to be done ('Describe existing systems', 'Functional analysis', etc.) set some time estimates for each, and presented them in graphic form.

With the help of this material, we negotiated the commitment of individuals to the Project Team. As one might expect, besides collective discussion over, for example, which teams should take part in the system pilot, there was a definite, if informal, amount of head hunting undertaken.

This approach involved us in a fair amount of work in getting the idea of a dedicated (time protected) Project Team accepted, as well as the specifics of individual commitments. Social work departments seem to sponsor working groups sometimes quite casually, with not much attention to time-plans and deadlines. In this context a proposal which was explicit about its timescale, and requested a number of whole days in specific weeks was perceived as an enormous commitment. We were ultimately able to acquire: 2 local Home Care managers; 2 Home Care advisory staff; 1 each of Home Help pay and accounts managers/staff; and the SWD Systems Officer. We did not quite get the clear solution we sought, as not all SWD sections involved could commit themselves fully. However, what we obtained worked, as sufficient staff were released for long enough to do real work, as opposed to consultation, on the User Requirement. The team could work within a plan, which itself helped when they asked 'how far have we got?' The plan allowed a push to be given to clearly defined tasks to get them done by target dates. Meanwhile the units which had released staff found they could

negotiate realistic arrangements to cope, such as time-limited acting-up, on the basis of our time-plan.

SWD User Requirement: Establishing a Project Steering Group

This group involved managers who were in the main one or two tiers above the Project Team. In some cases, they were Team staff's line managers. Others contributed additional breadth of organisational perspective. While the Project Team were working up a User Requirement, the Steering Group resource implications were insignificant apart from meeting-time. The Project Team reported to it on an approximately monthly basis (though this frequency was increased to fortnightly during system-building) via cross-membership, and it in turn reported quarterly to a Departmental Computer Needs Group, which is chaired by the Deputy Director, as operational head. It worked relatively informally, and served well both as a 'project clock', expecting to hear regularly about progress relative to plan, and as a reference group for certain decisions. Resourcing became more of a question when we reached the stage of vetting the proposed requirement, as we had an interesting time arranging the 2.5 days group time needed for a paragraph-by-paragraph scrutiny (5). This approach to consultation can be criticised for not collecting a sufficient number of individuals' views, but it does have the merit of enabling very detailed scrutiny and a discussion of the scrutineers' points (a dialogue usually lacking in global consultation exercises).

Cost Benefit Analysis (CBA) (6)

We organised our human resources informally for this task. The two systems analysts by now involved, and myself, undertook the calculations, drawing on our colleagues for

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information, comment and advice as necessary. For instance we drew on the knowledge of our Manpower Services Department in relation to standard multipliers such as 'effective working days per year', thereby being able to discuss the analysis with them at an early stage.

Conducting a CBA was another new experience, both for the SWD and, if the process of scrutiny by a senior corporate group was a guide, the Region too. Doing the exercise was itself productive. Defining what system function provided what class of benefit (some were 'realisable' and others not) took a good deal of discussion, but was vital to our managers' ability to argue the legitimacy of what we had identified as benefits, over those provided by other applications, some of which for instance were forecast to generate additional real revenue. (The CBA helped to establish priority within the overall development programme, as well as being a vehicle for scrutinising the proposals individually.) Actually making the estimates was a salutary exercise, and finally loading the CBA on to a spreadsheet has helped with subsequent budgetary calculations.

The advantages of using in-house resources for this CBA were that we all had ample background knowledge of how the proposed systems would function, and where data was available to enable any given cost/benefit calculation. We also had the background organisational knowledge required to gauge how specific definitions of 'cost' and 'benefit' would be received by the various audiences for the CBA. Outsiders, whether formal or informal resources, might have been able to do a technically more sophisticated analysis, but might have lacked the local knowledge necessary in using their results as negotiating tools for system development permission.

On the other hand, our informal use of resources for this task has meant that

the details of the analysis have had a lower profile, and thus been 'owned' by fewer people, than might have been the case if the work had been done up-front.

Construction of an Outline System Specification

This was done almost exclusively by the two systems analysts. Besides detailed work on data dictionaries and flows, they also considered the pros and cons of alternative hardware and software configurations, prior to collective scrutiny within Computer Services and subsequently jointly with the SWD. In terms of getting a System specification produced, ongoing consultation with the SWD during the detailed work would probably have been a resource overhead not worth incurring. On the other hand we may yet find we should have decided to incur the cost of educating ourselves about the way a mainframe solution ties one into reliance on not-always-reliable communications facilities. Meanwhile, the use of in-house staff did pay dividends in continuity of knowledge of both the proposals and of access paths to the variety of specialists working in any sizeable Computer Services Department.

We were lucky with staff continuity too, when the need to reconvene the Project Team to test out the proposed specification. Running typical day-to-day Home Care processes through 'dialogue-maps' and detailed screen-contents lists took about 25 hours of meetings, spread over about 6 weeks, and we were able to treat the task, informally, as completion of an earlier remit.

Obtaining the Remit for System Building

We had previously identified human resource costs for both Computer Services and the Social Work Department, within the CBA. Actually getting these committed proved to be a fairly critical stage, pressure on

the decision-making process being heightened a little by both sets of protagonists viewing the other's act of commitment as a test of real faith in the project.

The SWD resources identified as needed included a Project Leader, a Training/Liaison Officer, and some back-record conversion staff. We bid for these as new resources but were rebuffed by a Management Services who considered that computer system developments should not be an opportunity for executive departments to increase their staffing. For the first year of the project the SWD has had to second staff into the two project posts and borrow data processing staff to help with the back-record conversion. The work we were seconded away from has not been done, and we have spent time and energy arranging secondments which could have gone to gearing up the project. On the other hand, we might possibly have faced the task of familiarising a new Project Team Staff with the detail of the proposed system, and with all the organisational background, had we indeed obtained funds for genuinely new posts.

Corporately, we had obtained a remit to build and run a pilot-system, with an explicit commitment to a review prior to regional implementation.

System Building

The system is comprised of a number of discrete software components (eg Client Details, Daily Allocation, Home-Help Pay) all of which have to interact. Each component is naturally made up of a number of tasks, eg (within the Client Accounts component) to 'generate client invoice from account record'. These 'software tasks' were described in detail either by the chief designer or by designated staff responsible for the design of a specific component, before being allocated to individual programmers for more detailed design and programming. This is probably a

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fairly traditional approach to handling the design-and-build process, and certainly, to the end user, one with a welcome degree of structure. In project resource management terms, these tasks seem to be at about the lowest level of building blocks which can be handled reasonably easily within a project plan that avoids collapsing under its own complexity. From these building blocks, one can aggregate up to create sets of timescale and man-weeks estimates. Yet, even at this level of detail, one's estimate remains critically dependent on the programmers previous experience with the software tool being used, in considering how long any specific task is likely to take to do. The old adage about making a careful record as you go along of how long one's tasks take remains very true, given its value for subsequently comparing other tasks with the complexity and size of those already done. Purveyors of infallible algorithms for this sort of estimation should be taken with a large pinch of salt!

The use of a System Specification and Software Engineering Resources.

The software development team was sized and established on the basis of the outline specification. Although relatively detailed compared with some other outlines I have seen, it did not include the detailed 'software task' descriptions mentioned above. To expect such a level of detail from the system designer, prior to establishing a team, for any sizeable system, is probably unrealistic. What is required of the end user and Computer Services is the preparedness to make establishing the development team a two-stage affair, to allow for a recalculation after the specification has been detailed further. For instance we found only when we embarked on the task design for one component that a high level of interdependence between individual program routines was involved. This had consequences for the speed of

progress, for if routine A and B each rely on bits of each other's coding to perform their tasks, making steady progress with program testing is not all straightforward, with knock-on effects for timescales.

It is also most important to ensure that each component of the system is specified to the same level of detail. For instance we have found, with hindsight, that we have under-specified those components of the system which, perhaps coincidentally, involve a relatively high proportion of COBOL work, vis-a-vis those components involving more interactive screen access and 4 GL application generator programming. In consequence our timescale has expanded just at the stage when we could have done without this.

programmer at a stage when the development team may still be cohesive enough to enforce this. However, this alternative may carry with it the increased temptation to release the original programmer to other projects as one goes along, destroying continuity of general system knowledge and the mutually supportive team spirit that goes with this.

Central computer development resources are under enormous end-user pressure for work and it must be highly tempting to rush from one client to another. Preserving one's team in face of this is a crucial resourcing issue, and requires both a clear strategy - that development projects will get finished properly - and close enough day-to-day contact with the development team itself to become

Purveyors of infallible algorithms.. should be taken with a large pinch of salt!

Planning for Contingency

As well as attempting a size estimate for this timescale problem, we currently allow a given number of man-days per week within overall estimates for bug-hunting. Besides this, the way one organises within the software development team to cope with teething troubles and bugs is a resourcing issue. One might either expect the original programmers to fix their own bugs, with the probable advantage of a speedier fix, but the disadvantages of emphasising discrete areas of specialist knowledge of the system, and distraction away from progress on other development work. Alternatively one might make a specialism out of bug-hunting itself, with the advantage of placing an emphasis on adequate program documentation by the original

aware of competing demands and development problems at their earliest stages.

'Iterative Development'

This concept may possibly be known to earlier data processing generations as 'change-order procedures'. Just as important as the original sizing for any given component is the need for the workload implications to be an unthreatening part of the dialogue about making the system suit the real needs of the user - needs which in terms of interactive components can only really be established by trial and error testing. In considering the nature of the required changes, it can be easy to concentrate on this to the exclusion of what it costs.

The concept is complicated for us by the fact that we have used a mix of ICL

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Quickbuild 4 GL products and COBOL for the application itself. This mix seems to be necessary because, in summary, COBOL is a powerful 'processing engine'. The system involves a substantial amount of what might be called 'data manipulation' (eg translating 'service allocation hours' into 'Home Help Pay hours/input records' and COBOL is needed for these tasks). Whether the latest 4 GL 'workbench' products have this sort of power, is perhaps too early to say.

This apart, the ability to tailor the screen dialogue on the basis of experiment is a great boon. We found a big difference between some paper versions of screen dialogues, and what they actually were like to use seated at the VDU.

System Housekeeping

Database administration and teleprocessing management software support may only be a significant issue for mainframe systems. Either way, we have found that about 2.5 days per week of analyst time is currently needed to ensure both that the new components of the developing system are incorporated with those already being piloted, and that the application generally is enabled to co-exist with all the others also in use on the mainframe. The way one's application is serviced by the machine relative to others can be significant for its acceptability, as we found at one stage with communications message priorities and local response-time.

Data Loading

Part of the deal struck on staff resources was the loan of regular data processing staff to help load home help and client records on to the system. Despite a regional strategy for decentralising routine data input, the central data processing pool remained under considerable pressure, so we in turn were pushed to finish the job and return

the staff. We had made our specific bid for these resources using a plan and estimate, but were widely out in our calculations in the event because basically, we attempted to undertake data loading of an excessively untidy set of records on a still developing and untuned system, with its problems of software bugs, slow response times, and local VDU failures. The activity was an exercise in under-resourcing, despite its considerable value in testing some parts of the system, and the efforts of the staff concerned to get the task done. In this context the loan arrangement became a liability.

Running Manual and Computer Systems in Parallel

It is also necessary to cope with the workload surge created by the extra tasks of staff training, and running two systems in parallel until one is sufficiently confident in the reliability of the computer system and accuracy of its data. We considered two options: people or money. At first, it appeared that some staff time within the Central Finance Department would be freed up by the introduction of another computer system there, and we were offered the possibility of temporarily redeploying the individuals concerned. In the event their computer system had not been introduced by the time we needed extra staff, so the option was to be given money to fund one's own support arrangements. These latter were a mixture of overtime or extended working hours, acting-up, and acquiring temporary staff. We were able to fund these from a small contingency sum we had earmarked for such necessities, and the advantages for the local teams have been that their extra support has come from people familiar with the general organisation of the office and its systems. Training/familiarisation and local management overheads have been minimised, whereas training and managing staff who were unfamiliar

with the home care offices work, and who might not have been very keen on being moved about anyway, might well have been overly complex.

Whether such an approach will suit a rather more routinised approach to regional implementation in 16 offices rather than just 2 remains to be thought through. The idea of engaging and disengaging from 16 different sets of local arrangements, is not immediately attractive from a project team management viewpoint!

Operational System Support

Regionally, we are at the start of a planned rapid increase in the numbers of VDUs operational within executive departments, as part of the introduction of a number of systems besides Home Care, such as financial information and school administration. The nature and level of operational support needed for this amount of computer use will be very different from that which we have currently, and we have only just begun to think it out.

Certainly we found that we needed operational support from the start of local VDU use. The local equipment had a number of teething problems initially (I understand this is reasonably typical) though things have settled down since. There have been continuing 'system problems' with either the application software itself, the programs written within it, the communications software, or the way they interrelate. Again, this seems reasonably typical for an application comprised of a number of linked components, where programs written latterly may uncover previously concealed problems with earlier ones. The resourcing issues so far have arisen in terms of who gets asked for help. If one experiences a problem with the kit or the system, one can D-I-Y on site, phone the SWD Project Team staff, or phone either the development or operational teams at Computer Services.

Computers in the Dutch Social Services

Hein de Graaf

At some stage demarcation lines will have to be drawn and formal resources devoted to these potential sources of help as appropriate. Such a decision will probably be informed in part by where we decide to locate areas of specialist expertise, such as system (both office and computer), functioning software (applications and utilities), and hardware. At the moment it seems unrealistic for one centre to be expected to hold specialist expertise in all three areas - genericism seems to have come and gone here too!

Peter Ashe is a Project Leader with Lothian Social Work Department, based in Edinburgh

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Traditional feasibility studies incorporate a consideration of the validity of computerisation compared with the improvement of manual records. We incorporated this task within work on the user requirement, when we assessed the strengths and weaknesses of existing systems and what might be done to remedy the latter. However, to tackle improvements in both computer and manual systems within one project was a serious proposition - one might just as well take over the management of the service! Our resources had to be focused on specific tasks, and we have so far chosen computerisation.

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Social Services and Information Technology: A Collision?

People within the social services have until recently ignored technological developments on information systems; some of them still do.

Many social workers loathe everything connected with statistics, figures and technology. It is partly understandable that for them subjects like computer technology and automation have little in common with social services. Despite the fact that they are sometimes exaggerated, the values and norms of the social services imply that the focus is on emotional and irrational aspects of human life. Most of the time it is not possible to give a precise description of the kinds of needs the social workers are confronted with. It is also very difficult to describe what they themselves actually do. A second aspect of the social services is that most of the time the focus is on the unique characteristics of the human being. That approach makes it difficult to categorise human characteristics. Computers on the other hand seem to be useful only in those cases where the data is of such a kind that it can be defined in logical terms and categorisation is possible. There is no room for ambiguity, at least that is what the "computer-people" tell us.

In a recent study, the author of this article looked at two aspects. One investigated what the actual use of computers is at the moment and what the effects are of the use of computers. The second probed the future possibilities of computer use and the possible consequences in social services. This article is based on the results of that study.

International Resistance to I.T.

The resistance to information technology seems to be international. In an article in Computer Applications

in Social Work in 1986 (Vol.3 No.1) Walter LaMendola wrote of social workers in the U.S. being opposed to the information age (p.2). However, he goes on to argue that it is unfortunate that the information age changed while the opinions of social workers remained the same. The change in information technology was towards opening possibilities for computers to be used in a 'user-friendly' way and for non-technical purposes. Because social workers ignored this development in information technology they were left behind. They developed characteristics which could be compared with characteristics of the Third World stereotype - technical backwardness and dependence on others.

Social services are not capable of developing their own computer technology based on their norms and values. They are forced to 'import' an 'alien' technology from the world of commercial firms, banks and multi-nationals, where they have different norms and values. They differ for instance in their view of what an organisation ought to be, how people ought to work in it, and what goals they ought to have.

It is, according to LaMendola, to be expected that the social services, in buying the 'alien' technology, also unknowingly import the norms and values of this alien world. They begin to assume that such a way of thinking is inherent and unavoidable if you use computers.

LaMendola wrote: "The transfer of technology from other disciplines discourages the profession from building its own technological skills and contributing independently to technological innovation. Because technologies are not value or organisation free, imported technologies bring values and organisation with them. These values and organising principles become a part of the accepted reality among technologic dependents.

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It deprives them of their ability to generate ritual, myth and tradition around the development of the tools of their culture. Imported organisational and value realities must be recognised in order to be accepted or disregarded." (p.3)

In my study I tried to see if the analysis of LaMendola could be used for the Dutch situation. Is there a collision between social services and computer technology, or is there a possibility that they could get along with each other just fine?

First of all I had to find out if the social services already used computers and for what purpose. It turned out that about half of the agencies have some kind of computer. But in by far the most instances they used them only for administrative tasks.

The Dutch Situation

It seems that in the Dutch social services information technology is beginning to be accepted, but mostly by management and not by the workers themselves. The management is, in these (economically speaking) hard times, under great pressure in a public and political climate that is not always favourable to social services.

In most recent years the image of the social services in the public and political eye has been getting worse: too soft, a lot of money for a lot of hot air. So, if there were questions as to where there had to be cut-backs, the social services were a perfect victim.

Of course, there followed a counter-movement in the social services. The managers wanted to get rid of this soft image - accountability, show what you have to offer, hard facts. For these people the computer was (almost literally) the *deus ex machina*, a machine that would offer the desired new image - efficient, hard facts, modern, fast and reliable.

A few years ago this counter-movement was relatively small. In a very short time this has changed, however. Two years ago a small survey of the use of computers in social work pointed out that apart from some 'freaks' using Commodore 64s and such, there were no personal computers in sight. The only use of computers at that time was to send written material (mostly client data) to a central organisation with a mainframe, and to receive lists of figures and tables, a year too late and with nobody who could understand them. The survey done by the author in November 1986, however, painted a different picture. Half of the 180 social work institutions used one or more personal computers, the other half apologised for not having them and assured us that within a short time they would purchase one. As if we were accusing them of malpractice!

Surveys in other fields of the social services had the same results. In the study, the managers told me that social services didn't keep up with new developments, they need to become more professional and efficient. They told me that the computer in their opinion was essential to reach that goal.

One of the reasons the use of computers is becoming more important for the social services in the eyes of the managers is that there are other competitors in the information market, either potential threats or partners for the social services. For instance, public libraries. There is already an experiment in part of our country where all the public libraries have a computer accessible to the public giving not only bibliographical information but also social information. This last term (used by the libraries) is rather vague, yet, can duplicate all information that the social services are giving as part of their job. The work of some social services agencies is 60-70% giving information and advice. There could develop a very fundamental discussion between public

libraries and social services about, for instance, the difference between 'information' in the form of logical facts as answers to logical questions and 'advice' in the form of pointing out several possible ways to a client of dealing with personal problems.

Of course, the answers of the managers to questions about the use of computers don't tell the whole story. I asked myself the question, what is actually happening in all these institutions? Are all those 'sandals and goat-hair-socks-wearing' social workers extinct? Clearly not. So, what happens if the world of computers and technology meets the world of words, feelings and empathy? That's why I went to social workers themselves to ask them about the use of computers, and they told me different things. Apart from some exceptions, they are not interested in computers and are doubtful that they ever will be useful for them. Those machines are for financial purposes or for wordprocessing and that's all. Many of them are even opposed to computers, and see it as a sign of the bad times we live in that they are so popular.

As is to be expected from these different opinions, the computers in social services are mostly used by the administrative staff and clerks for purposes like wordprocessing, financial bookkeeping and record keeping of personnel and clients. It is not so strange that social workers don't conceive the use of computers for themselves. They are occupied most of the time with things like therapy, advice and counselling. They don't have computers at home and most of the time didn't learn to work with them at school. They only see computer applications in the media or at fairs that have no connections with their work. Accountants and typists see the same thing on the computer screens as they used to see on paper. It is important to present computer applications in such a way that social workers can also

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recognise it as something they can use in their everyday work. Manifestations like HUSITA in the United Kingdom and WELCOM in the Netherlands try to achieve just that.

Some Study Findings

One of the findings of my study is that there are a lot of problems in the contacts between the computer market (the sellers) and the agencies (the buyers). The buyers get the wrong advice, buy the wrong equipment for too high a price, and don't get enough after-sales support. Here are a few genuine examples from my study, with changed names.

Example 1:

Salesmen and Computer Freaks are not Good Advisers

The board and the director have decided: "There will be a computer". But unlike their divine predecessor such a creation will not happen out of the blue. They have to seek advice how to buy computers. There appear to be two resources for this advice. I found out that the main source was the computer company they already have contact with regarding financial administration. Originally most of these firms were service organisations: now they all sell computers on the side. The second source is the computer-freak living next door to the director. This person is obsessed by only one computer, his own brand. So his advice is very predictable.

Here is an experience of one social services institution I visited. I shall call it Stub (for stubborn). The national organisation in this field advised their members to buy a computer system plus software from company X, a big multinational. This system included client registration and financial administration. Stub always did business with another, very small firm, however. Let's call them AFB (A Fast

Buck). They asked for some advice. AFB told them they could offer the same thing as company X but for a much smaller price. Stub didn't like its umbrella organisation anyhow, so the deal was made with AFB within two days. It transpired that the software worked all right but just so long as nobody made any mistakes. During the holidays somebody typed in 1996 and from that moment on everything went haywire. AFB turned out to be unable to give adequate support or instructions, there were no Dutch manuals, and there was no contract with the firm so there were no legal rights.

Hard and software can be supported by a reliable company. Training however is seldom included in the price. The last two fields have to be covered by other sources than the company who sold the computers. Unfortunately, these sources are until now absent in Holland. So, there remains only one source of support and training for the buyer, the seller.

Our second example is about an institution called Vic (for victim), and the support they got from a large Dutch company called 'Big'. Vic wanted a registration system for their clients on

Hard and software can be supported by a reliable company. Training however is seldom included in the price...there remains only one source of support and training for the buyer, the seller

Example 2:

If you buy a computer, you buy three things: hardware, software and human-ware.

There is usually a budget for the hardware, and in most cases some money left for software: but nobody thinks of the most expensive part of the deal, the human-ware. To be able to operate computers in such a way that there will be the results you expected, you have to have support and training. This support and training has to cover four fields:

- ☐ the use of the hardware
- ☐ the use of the software
- ☐ the application of software for your own purposes
- ☐ the translation of computer output into forms that other people can understand.

computer and not any longer on a card index. One push of the button and they would get all the information they wanted out of the computer! They got a computer plus software from company Big, a firm that had handled their financial administration for years with good results.

Big told them that they had to put their own money into the development of the registration system, and that it was too expensive to make more than just a first version. So there could be some bugs! Of course there were more bugs than in any swamp! If they wanted all the Joneses, they got Smiths for example. And all the time the poor person who had to operate the computer didn't know if the fault was hers, or a mistake in the program. The answer of Big was that they could give all the support they wanted and also fix the faults, but in that case Vic had to pay the same price they paid for the equipment, every year.

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Some Key Questions

It can be concluded that the contract between the social services and the computer market is problematic because they don't know each other well enough, and have a too simplified view of each other. This brings me back to the analysis of LaMendola and his hypothesis of colliding norms and values. What are those norms and values that collide? What are the actual consequences of such a collision? These questions lead us to the key questions that had to be asked over and over again in the study: what do you actually do in your agency? What are your goals and means, now and in the future? What is

machines to use them. So these definitions have to be unambiguous and clear. In Belgium, for example, one of the main issues is the development of a thesaurus for the social services to avoid misunderstandings in the interpretation of the terms used in computer applications.

This brings us to a question that I cannot answer just now. Is it possible to define the main terms used in social services in a logical and unambiguous way? There have been a lot of efforts to do this in the past and they all failed. What exactly is 'guidance', 'counselling', and 'therapy', to name a few? The meaning of these terms change from

more easy and possible than otherwise would happen because of the cost in time and effort. The important thing is to show people what the advantage of a computer can be for them in their specific circumstances. It is my experience that people, including social workers, can learn to use computers very quickly and well if they want to and are able to see the possibilities for themselves.

Recommendations

Based on the results of the study some recommendations can be made for the social services. From discussions with experts in the U.S. and the U.K., I have the impression that a lot of these recommendations are also of some use to other countries.

..the contract between the social services and the computer market is problematic because they don't know each other well enough, and have a too simplified view of each other

the philosophy of the social services in clear and rational terms? These kinds of questions are not new: they were asked from the beginning of the social services, but until now they could be answered in a roundabout uncommitted way using a terminology that for the main part consisted of words with emotional overtones. Confronted with systems that exist by the grace of 'hard logic', these answers are no longer adequate. I want to make it clear that I'm not saying that value-laden communication between human beings is not important in the social services, as long as both parties know what they are talking about. In the confrontation between computer technology and social services, however, it is important to define goals, means and ways of working precisely enough for people and

moment to moment. As you can see, the study I did resulted in more questions than answers. The last one of course is: is the computer of any use if social services cannot define the terms they work with? Certainly it is possible to use computers in the actual work done in the social services. There are enough examples, especially in the U.S. and in Britain, like advice systems, expert systems, decision support systems, databases, data-communications, etc. On the other hand it is important not to exaggerate the possibilities of computers in social services. I am very much opposed to such a term as 'computer-illiterate'. Not to be able to read and write is a problem that cannot be compared with the inability to use computers. Computers are only instruments to make things

The study pointed out that, in social services, everybody is trying to find a way through the labyrinth of the computer market, to get proper help about hardware, software and humanware. An institution to give this advice support and co-ordinate such an exchange is missing in the Netherlands. The first recommendation is to start such a transfer-centre on a national level with tasks such as:

- ☐ Giving advice and support, and to be a kind of matchmaker between buyers and sellers;
- ☐ Coordination and recording of activities in this field;
- ☐ Stimulation and development of new possibilities;
- ☐ Research of new technological developments and analysis of the possible consequences for social services.

There are plans by the government to start such a centre in 1989. It is important for such a centre to keep in close contact with initiatives of the

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same kind in other countries. Perhaps the HUSITA Convention can be the start of an international body to coordinate the different national centres of this kind in the world.

The Organisational Plan

A second recommendation is of a more practical nature, Agencies with plans to buy computers must first make an organisational plan. What is going on in the organisation, what different parts with different functions, goals and means are there in the organisation? It is important to realise that everything that is going wrong in the organisation can become a disaster after introducing computers. In the organisational planning there are several points to be made: what are the procedures that can be improved or made possible by using computers? What are the results one expects? What personnel is necessary to run the computers?

There has to be consensus about the systems that are to be replaced by new computerised systems. How long is it necessary to maintain the old procedures by hand before deciding that the computer can take over? There are examples of organisations that have a double system for years, on computer and by hand. It is important to avoid part of the personnel still working in the old way while the other part has already switched to the new computerised approach.

The Clear Allocation of Responsibility

New internal regulations have to be made to make clear the responsibilities for everyone. What use of the computer is allowed by different groups of staff? There must be a computer supervisor to control the use of the computers, who is also the one to take care of the data protection. It is important to evaluate the effects of the use of the computers regularly. Are the results as expected? Is it necessary to make changes in the

It is my experience that people, including social workers, can learn to use computers quickly and well if they want to and can see the possibilities for themselves

plans and the computer configuration? After such a plan is made, it is possible to decide what hard and software to buy and what training is necessary for whom.

The Need for Specific and Reasonably Priced Software and Hardware

One of the conclusions of the study however is that there is a shortage of software of specific use for the social services. Often it is necessary to order special applications or programs. But the prices are often too high for social service agencies. The above-mentioned national transfer centre is also important to centralise the search for effective software and to advise on the hardware.

Conclusion

The overall picture that emerges from the study is that half of the agencies have a computer, in most cases only for administrative use. They had a lot of trouble buying them and have a lot of trouble using them. There are not sufficient unbiased and expert advisers, so the only adviser used is the computer salesman. It has the characteristics of a case of drug-dealing. One buys a thing for a not too big amount of money and is hooked. The only one to turn to for more is the dealer, and then it costs you a lot.

Computers are on their way in the social services and nobody can stop them. Time will tell whether the result will be a renaissance or a disaster. □

Some of the themes of this article will be developed by Hein de Graaf in a paper to be presented at the HUSITA Convention.

Hein will particularly welcome discussion of these issues with anyone who can contribute from their own experience.

Soft but not Squidgy:

Obtaining Staff Resources through Special Funding Measures

Stuart Montgomery

Introduction

Among the many resourcing issues encountered during the introduction of computerised systems, a rather neglected one is that of securing sufficient clerical effort to carry through the changeover. Though not perhaps as obviously relevant as the "higher level" skills of programmers and project managers, the need for clerical resources is nevertheless critical, and many difficulties in obtaining or managing them may seriously disrupt implementation schedules.

Different technologies, and different types of system make different demands in this respect, with the balance between computing and other skills varying considerably. At one extreme, projects such as the take-on of manual records are likely to require little expertise in computing itself, although a thorough knowledge of departmental recording procedures is essential. Other projects, by contrast, may call for a different kind of "clerical" contribution, more skilled in computing and more capable of contributing to the design and construction of the systems themselves. Examples here might include some micro-computing applications as well as viewdata or teletext packages, where the end-user has more scope for autonomy than is the case with traditional main frame systems.

This article describes our attempts within Strathclyde Social Work Department to find resources for this second kind of project - in this case the early developmental work on a viewdata system. It tells of how initial methods of "recruitment" met with only limited success, how we overcame this by linking in with a scheme of work experience placements for unemployed people with physical handicaps, and how, gradually, the "clerical resource" thus secured took on a more general role in introducing and supporting new technology in the department than was

originally envisaged. It concludes with a discussion of the wider issues raised by using this kind of soft resource.

Background

A general description, and a demonstration, of Strathclyde's viewdata system was given by Alistair McNicol (formerly a Development Organiser in Glasgow Division, Social Work Department) at the CASW conference in 1986: and in vol. 3 no. 3 of this journal. In brief, the Themis package, marketed by Thorn-EMI, is employed; it is hosted on one of the Region's Honeywell mainframes and accessed via the telephone network. The first development work started three or four years ago, centring on an interactive welfare benefits check, which was, and is, developed and maintained jointly by Computer Services Department and welfare rights staff within Social Work, and is expected soon to go live. The potential of viewdata for other applications was quickly realised, and a "Social Work Information" sub-system was established on a trial basis, the effort being shared between a social work officer and a trainee programmer from France who was on short-term placement within Computer Services.

However, the impending restructuring of the department was at the time beginning to cause uncertainty about many specific and general issues relating to new technology (inter alia) and it was only in early 1986, when some of these began to be clarified, that a fresh impetus for further work emerged. The brief then was to revise the "Social Work Information" sub-system, something we felt would be best accomplished by repackaging it under the headings, "Directory" (listing service points, establishments and other resources), "Procedures" (intended to be the procedures manual in electronic form) and "Statistics" (for example, population and caseload figures at Area Team level). Besides recasting the

system this involved considerable editorial revision of the existing sections, and the creation of a great many entirely new "pages".

Still regarded as a fairly informal test of the general utility of viewdata within the department, the project as yet attracted no additional staff resource, and therefore had to be managed alongside the other commitments carried by research officers and the research section's clerical workers. Consequently progress was slow. Searching for a remedy, we offered to train clerical staff from other sections in Glasgow Divisional H.Q. to operate the system (including creating and routing pages) on condition that they returned to us on a half-day a week basis for the next six weeks to consolidate their skills as well as to help get the work done.

About ten people were "recruited" in this way, in two cohorts, and during their training and subsequent follow-up a lot of work was accomplished - with their progress in the creation of the more straightforward and sizeable sections forcing us to keep one jump ahead on the editorial and design side. However, there were some problems in managing what was a fairly slippery resource. Pressures of their own work led to rather irregular attendance by some of the workers, problematic at a time when they still lacked experience and confidence in the system. Equally, of course, our arrangement meant that almost as soon as they had reached the top of the learning curve, and could make the greatest contribution, their time was up and they returned full-time to normal duties (One or two, in truth, were able to find time to stay longer with us). Finally, the informality of the set-up made us very vulnerable to losing our workers, particularly while the restructuring of the department was under way. Another, brighter vulnerability emerged when one of the "temps" was poached by the company supplying our viewdata kit; his

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transition from "basic grade clerical officer" to "Marketing Support Representative" meant that we lost an enthusiastic and capable resource, but also led to a clamour from the other clerical staff to get on the project.

Given the circumstances just described, we would have been hesitant about trying to recruit a third cohort from the mainstream of clerical staff, but in the event we were spared the decision, for it was at this time (April 1986) that an invitation to participate in a work-experience scheme offered a solution.

The "Vocational Training for Disabled Adults" Scheme

The scheme is jointly funded by Strathclyde Regional Council and the European Social Fund, and aims to provide realistic work-experience placements within Council Departments, ideally with an emphasis on new information technology, for people with physical handicaps. Each "trainee" is taken on for a period of up to one year, working a four-day week, and receiving a training allowance broadly in line with basic grade clerical wages. The administration for the scheme is handled by development staff within Glasgow Volunteer Centre, who have the responsibility for arranging and monitoring the placements, and for securing a formal training input (which, this year, took the form of a twelve-week, one-day per week, introductory course in computing, held at a local F.E. College). Day-to-day supervision and on-the-job training are the responsibility of the section offering the placement. The scheme's current budget allows for a maximum of 20 trainees, of whom four are presently placed in the research section.

The first two started in May 1986 and concentrated initially on viewdata work, receiving instruction and supervision in the creation and routing of pages of text. From the outset, however, we ensured

that other work (both manual and terminal-based) was available, to avoid over-long sessions in front of a screen and to guarantee that the range of computing experience was as wide as possible. This mix has continued to be a feature, as has an attempt to offer a graduated progression into more demanding areas of work. At the time of writing, for example, one trainee is analysing details of requests for reports and of disposals that are recorded on new stationery being piloted in several local courts. She and another trainee are transcribing this information on to a coding frame constructed by themselves (and typed by a third, who joined in November to gain typing and word processing experience). They have begun to build up a data file, which they have already successfully run against an SPSS system file programmed and input entirely by themselves. Yet another trainee developed an early interest in graph-plotting, using the Easygraph package on the mainframe.

Other projects involving some or all of the trainees have included several social surveys, in which they have acted, variously, as coders, data-preparation workers and research assistants; word-processing, on a BBC micro loaned by the Volunteer Centre; typing, on an electronic machine loaned by the typing pool; assisting with the maintenance of routine client-based information systems (straightforward batch input and verification of case details). And of course, viewdata, which, as noted above, centred on the development of the directories, procedures and statistics segments.

After initial training on viewdata there was a period of fairly straightforward loading of pages, during which the trainees had little involvement in designing the overall structure, or indeed the individual screen formats. It was very much a case of getting on with the donkey work, and allowing research and clerical workers to make progress on the

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Her illustrations of the extent and nature of inter-district, and inter-team, variation in Section 12 spending within Glasgow Division were received enthusiastically, deepening her own interest to such an extent that in September she registered for a part-time masters degree at Stirling University (She already has an undergraduate qualification). Once again, the SPSS package will figure importantly in this work.

design and editorial aspects; the fact that the trainees were also helping with other routine information systems contributed to this too, by permitting one of the section's clerical officers to spend more of her time on viewdata work. With time, however, they were able to make a more skilled contribution, taking more and more of the minor structural decisions and carrying out occasional housekeeping of the system.

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In addition, they have been able to help in experimenting with alternative screen formats, including the fairly sophisticated "overlay" option, when several images combine sequentially on the same screen. They also made it feasible to develop alternative prototypes: on the directory side in particular we were faced with many options for structuring the information. A section on services for people with problems relating to addiction, for example, could have been organised on a geographical basis, or functionally (residential care, day care, etc.), or according to the type of agency responsible for the facility. In such cases it was useful to be able to try out the various structures before making a decision.

and indeed nature of the social services, and that consequently there should be no need to scratch around for the wherewithal to sustain it. That is a valid argument, but the problem with it is that management is commonly faced with equally compelling arguments for each of a large number of competing developments, and if we wait for the perfect combination of circumstances before going ahead with a new technology project we are likely to be waiting a long time.

The typical project, after all, will be granted only some of the resources its advocates think necessary. As Peter Ashe shows in this issue of the journal, even in Lothian Region, where there was a great deal of practical management

same ingredients. And if that is so, then the question becomes one of balance.

In addressing that question, it should be remembered that the interests of temporary workers do not necessarily coincide with the day-to-day concerns of mainstream members of the department. To use another example from personal experience: the take-on of manual records during the computerisation of Grampian Social Work Department's index was carried out by temporary staff recruited through Manpower Services Commission's Community Programme (1). These were people who had been unemployed for lengthy periods, who had few formal qualifications, and who in the main wanted to gain a broad experience of office practice, particularly its computer-related aspects, in order to improve their prospects of permanent work in the future. In several of the department's offices, however, there were quite severe pressures on accommodation, and it was argued strongly (and almost successfully) that temporary staff should work a twilight shift, or even a night shift, and since no access to the computer was possible outside dayshift hours in those days, that they should work exclusively on transcribing the index records on to input documents, the actual input to the machine being left to data preparation workers in the Computer Services Department. Whether that proposal was defeated on grounds of practicality or ethics is uncertain, for it was challenged on both, since we were unwilling to stake everything on the moral argument against abusing people to make a caring service more efficient.

The potential conflict of interests may also surface in relation to training. Most social services managers would claim to be in favour of in-service training for all grades of staff, but they would probably draw the line at temporary staff. Equally, temps are unlikely to be eligible for corporate

Most social services managers would claim to be in favour of in-service training for all grades of staff, but they would probably draw the line at temporary staff...since it is not common for temporary schemes to have lavish training budgets this can present a real problem

Discussion

A number of important issues are raised when the kind of "soft resources" just described are employed. Perhaps the most fundamental concerns the responsibility of social work and social services departments (and indeed of the local authorities themselves) for the introduction of new technology. A strong argument against using such expedients is simply that they should not be necessary; that computerisation is not a peripheral matter, but one with crucial implications for the administration, management, delivery

support for the homecare computerisation project, it proved impossible to secure proper clerical effort for back-record conversion during the pilot stage, and a rather unsatisfactory, but in the end effective, resort to Computer Services' data preparation workers had to be made. Viewed in that light, the experiences we are describing in these articles are not polar opposites (with a consensual, rational approach contrasted with an entrepreneurial, opportunistic model) but are merely different blends of the

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induction schemes or skills-development programmes. Since it is not common for temporary schemes to have lavish training budgets this can present a real problem. Entrants will probably lack even basic familiarity with computing, and unless their job-content is to be pitched at the dulllest and most routine level a considerable amount of mainstream staff time will need to be diverted to training and supervision. Obviously, the more seriously the training element is taken, the more of a problem this could become. The Strathclyde scheme has attempted to solve this by the formal day release course in computer awareness mentioned earlier, and we are hopeful that as the scheme develops this will be complemented by access to the broad range of in-service courses, run by the Computer Services Department, that are meantime available only to mainstream staff. We are also trying, for more general reasons, to negotiate some loosening of the Council's current policy in relation to jobs advertised in

the internal vacancy list, to allow the trainees to apply. If the attempt is successful there would be a training implication, since it would help any doubters to regard the project as an investment, and therefore worthy of a serious training input.

Although we still have some way to go in sorting out such issues, our experiences so far seem to me to prove the worth of this scheme. The research section has been able to obtain valuable resources which have helped a range of new technology developments to progress at a much faster pace than would otherwise have been possible. And this has happened, I hope, in an atmosphere of reciprocity, in which people who had been finding difficulty in breaking into the employment market have learned skills that are in fairly short supply. There may be other departments, or other agencies, where similar schemes would be appropriate; if we can help with further details please get in touch. (2) ☐

Stuart Montgomery is Senior Research Officer with Strathclyde Social Work Department, based in Glasgow.

Notes

(1) See Montgomery, S., "Developing a Computerised Client Index in Grampian Social Work Department", in *International Journal of Information Management* (1986), 6 (37-41)

(2) For information about the work-experience scheme as a whole, contact Ian McGillivray, Development Officer, Glasgow Volunteer Centre, Elmbank Street, Glasgow G2.

For details of the placements described in this article, contact Stuart Montgomery at SWD, McIver House, Cadogan Street, Glasgow G2.

Acknowledgement: I am grateful to Andy Cassidy, Frances Duffy, Anne O'Donnell and Liz Webber for their comments on an earlier draft of this paper.

CUSS Electronic Network

The electronic component of the Computer Use in Social Services Network (CUSSnet) establishes local bulletin boards, local and international mail and mail transfer, and repositories of electronically available information.

CUSSnet builds on FIDONET, 1500+ nodes local BBs (bulletin boards) across the world. These nodes automatically connect nightly to exchange mail and files. Most local FIDONET BBs are free with the exception of a small fee for sending mail electronically. CUSSnet nodes perform functions such as: maintaining a bulletin board (messages/files) for local users; maintaining a local message area for international mail and conferencing; exchange weekly speciality information /files with other CUSSnet nodes; helping new users subscribe and access the network.

To use CUSSnet

If a CUSSnet node is in your city, you're in luck. Simply dial it up using your computer and a modem and follow the directions. If no CUSSnet node exists in your city, you can call long distance to any CUSSnet node listed below. Before

calling CUSSnet long distance, you can learn to use FIDONET BBS software by calling a local node.

To locate a local FIDONET node, ask your local computer dealer or call 130/5 (below) and type FIDOLIST.80 in the help file area. You can also use a local FIDONET node to send mail and get whatever CUSSnet information your local BBS operator will get for you.

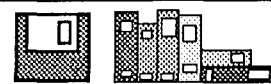
You may have to pay a small deposit to your local FIDO. Communications are at 300 - 2400 baud, 8 data bits, 1 stop bit and no parity. Almost any computer or terminal and modem will work.

Message areas: local messages, local NEWS, FIDONET mail, national ECHOMAIL conference and resources (books, announcements, software, etc.)

File Areas: Files related to mental health, developmental disabilities, welfare, health, training, games and utilities.

To start a CUSSnet Node, call Steve Ice in Seattle at 206 442-2430

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Software.....

Books & Periodicals

Aspect Information Management System

A relational database management system distributed by Microft Technology of Kew, London.

For now, 'relational' means that the data may be split into manageable segments held in separate, linkable files and an activity may access several files to read related information. This gives much flexibility in the use of data and facility in changing the data structure. To us, the latter is essential in the ever-changing world of social work.

Within Aspect, there are two important constructs - the menu and the macro. Macros are programs written in a high-level language. There are seven macro types; map, menu, input, view, report, extract and format, for operations such as data input, processing, printing and display. Menus allow the actioning of macros. A series of numbered options is presented on the screen and by typing one in, a user initiates the process performed by the corresponding macro.

To use Aspect one creates the necessary macros. Don't panic! You do not have to learn a new programming language, though as your system develops, you will probably want to. Aspect comes with a suite of macro generators which take you by question and answer through the process, displaying the program statements line by line.

Once familiar with the language, you may type in a macro for immediate action. You may also generate more complex macros either from existing ones by using the edit mode, or from scratch using a word processor.

Thus there are three ways of interacting with Aspect. The simplest is through menus, the next is through the macro generators, and the ultimate - itself not too painful - is through the Aspect language.

The authors have been using an evaluation copy (price £40) running under MS-DOS on an Apricot Xen HD. It has proved efficient, fast, powerful, flexible and very easy to use. They will shortly be implementing a system using the full package (£400) on a Hewlett-Packard Vectra and will then review it more comprehensively.

Stephen R. Brewster and David H. McGlynn
Moss Side and Park Lane Hospitals, Liverpool

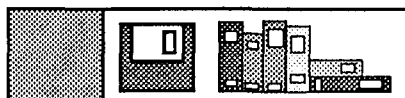
Social Welfare and Computers: A General Outline

N.J. Smith, 1985.
Longman Cheshire
124 pages. £6.95

In 1973 I was a student at the Department of Social Work of the University of Edinburgh. My tutor then was Mike Adler who introduced me to one of his research students, Dave Du Feu. Dave and Mike were probably the first people working in Social Administration in the U.K. to take a serious interest in how computers might benefit the recipients of Social Welfare. Dave was interested in welfare benefits and I still have a yellowing print-out from a mainframe system explaining, to a (fictional) Fred and Doris Archer, exactly what their rights were under the Social Security System that existed in Scotland at that time. Until I read Dr. Smith's book I was unaware of Dave's more recent unpublished (but now very topical) work on the reception of computer systems in Social Services offices.

Dr. Norman Smith is the Director of the Human Resource Centre at La Trobe University, Melbourne. I am indebted to his book for bringing to my attention, not only Dave's later work, but also a great deal of other little known research that has been carried out since the early 1970's when computer based information technology first became available to Social Work agencies. Dr. Smith's book plots the recent history of computers and developments in the provision of Social Services and describes how these are now interacting. One feels confident when reading his book that all the relevant Australian, American and British sources have been distilled to produce a thorough historical perspective. Maybe a little too much emphasis is placed upon what is now obsolete technology. Is it helpful in this era to have diagrams explaining how paper card and tape were once used for input purposes?

I think the book would have been more useful if Dr. Smith had concentrated more on the analysis of Social Policy matters rather than on the "micro revolution" as he calls the recent development of the computer. Certainly, the final chapter, entitled "Information and the need for understanding", highlights some important reasons why computer systems must now figure much more in almost all future welfare



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policy discussions. I would have liked to have read more about Dr. Smith's views which might inform such discussions. The book ends with a warning that new professions may emerge to take the place of those social welfare professions which do not respond to technological change.

Colin Barnes

Long predicts increased 'teleshopping' and a whole range of aids which will allow us to let our fingers do the walking.

There is much to challenge and confront in this book. It attempts to redress the balance by stressing ways that IT is both about and for people's needs. Those in caring roles will find Part 2 particularly useful, especially in thinking further about the application of IT to handicapped or ill people.

Chris Hanvey

Coventry City Social Services Department

Information Technology and People Designing for the Future

R. Blackler and D. Osborne (eds),
British Psychological Society 1987
ISBN 0-262-02260-5.
£15

'In a factory a man makes a little piece 'till he becomes a little piece'. Dimitri, the character in Wesker's play who utters these words was talking about the dehumanising effect that industrial life can so easily have. He was not referring to information technology, but, here too, his words might be seen to carry a similar warning. Only by re-introducing the 'people' aspect into IT will we make it our slave, rather than our master.

This theme rings through the collection of essays brought together by Blackler and Osborne. In a series of very helpful and stimulating papers they pose the question as to how we should approach the 'human factor problems' of IT. To this end the book is divided into three major components. Part I looks, in broad terms, at 'organisations' and the way in which they are absorbing or need to absorb IT. The point is endlessly made that only by encouraging cooperation between users and technologists will there be any hope of success. The introduction of IT into large organisations will not lead automatically to success. Only by encouraging participation is there hope of achievement.

The second part is of most relevance to those in the caring professions and looks at IT in health and education. There is an interesting chapter by Hales, unfortunately titled 'The Disabled'. The point made by Thomas and by Fitter, in separate chapters, is that IT provides both an organisational tool and also a direct source of aid to those who are disabled or ill. Hales also examines this point in relation to IT which assists language disabilities and which can be an aid to communication.

In the final part of the book, essays are devoted to IT's role in the home and in people's daily lives. Crystal ball gazing by

The C.T.I.S.S. File

The first issue of the Computers in Teaching Initiative Support Services newsletter, follows the formation of a group with a broad remit relating to the use of computers in teaching in British Universities. Those involved in teaching workers in the helping professions may like to find out more about this group. Details are available from:

C.T.I.S.S., South West Universities Regional Computer Centre, University of Bath, Claverton Down, Bath, BA2 7AY

Micropsych Network The Psychology and Behavioural Science Computer Newsletter

This bimonthly newsletter contains brief notes about all aspects of microcomputing of interest to psychologists. There are now over ten issues of this rather academic, and yet irreverent, organ ("Give someone two hours of training and some mouthwash and you've got a computer company rep"). A colleague has suggested that a few pages of this newsletter prove to be an excellent cure for insomnia but I must confess to finding the touches of humour amusing, even if many were incomprehensible "in-jokes". At least I hope they were jokes! Psychology in the USA would appear to support some very obscure uses of information technology and I suppose it is just possible that a 420 page text entitled "The use of peripheral devices as sexual aids" was submitted for review. The editor claims to be amazed by chapter four and suggests that the material be more suited to a clinical journal's columns. Psychologists and others wanting to find out more about the US scene (albeit without details of new uses for your RS423 output) can obtain subscriptions and back copies from:

Lawrence G. Ritt, PhD, Publisher
Professional Resource Exchange
P.O. Box 15560
Sarasota, FL. 34277-1560

HUSITA Abstracts

When HUSITA made a call for papers for the First International Conference, the initial response was massive. About 200 papers have been received. Authors were subsequently asked to provide briefer abstracts of their papers so that these could be published and made available for participants as they arrived at the conference. To date (that is near the end of July), 135 abstracts have been received and are reproduced in the following pages.

Abstracts are printed in alphabetical order of the first author, with the exception of some late arrivals. For the most part they have not been changed, but the editorial pen has been wielded from time to time. Firstly, there has been some attempt to present the abstracts in a standard format, broadly consistent with how the majority of submissions were made. That is to say, authors' names have been included, but not qualifications or job descriptions; and spelling has been anglicised (the most difficult being to distinguish between 'program' for a piece of computer software, and 'programme' for all other uses of the term!). Secondly, minor alterations have been made to abstracts from authors who do not use English as the first language, if the meaning would otherwise be too obscure. However, much of this 'English as a second language' has been left unchanged. Thirdly, those few authors whose abstracts were nearer in length to a full paper may find that they have been victims of a little pruning.

Stuart Toole and Walter LaMendola have categorised the papers into 9 topics:-

- Information systems and the consumer.
- Education and training, including computer-assisted learning.
- Empowerment.
- Privacy, information ownership and codes of practice.
- Technology transfer and third world issues.
- Direct use with clients, automated assessment and treatment decision-making.
- Networking and electronic communications.
- System design and development.
- Policy development and administration.

A co-ordinator has been appointed for each topic, who will have the task of presenting a topic overview paper, drawing out the main themes in his or her cluster of papers. These overviews are still being written, so are not printed here.

Bryan Glastonbury

Management Technology for Human Services

Jimmy Algie, William Foster, Chris Cheattle

Human services have introduced:

- 'performance technology' to mechanise routine tasks (e.g. payroll and billing systems, word processors);
- 'information technology' to process and retrieve factual data (e.g. databases, spreadsheets)
- 'communications technology' to convey information faster, further and clearer (e.g. electronic mail, audio-conferencing, graphics).

This technology primarily assists the more routine, less skilled work in human services.

A new kind of 'management technology' has begun to be used in some human services. This **directly** helps managers and professionals with their primary, high skill tasks that involve the use of discretion. Management technology helps people make more reliable decisions, plans and evaluations faster, based on their own views and values and any available data.

Three examples are given of management technology in human services. The **Priorities** program helps people decide just about any issue; its use in diagnosing and treating child abuse is illustrated as an example of 'decision technology'. **Budget Priorities** which is used to allocate scarce resources, illustrates 'planning technology'. The evaluation and re-planning of work with the help of **Work Priorities** illustrates 'evaluation technology'. These programs, which won the International Standard Award for Business Software, were first developed and applied in health and social services, though more extensively used in over 500 business and industrial organisations.

Such management technology is evidently helpful for faster yet more reliable management. Yet Brunel research has shown it to be *more crucial for effective social services than an optional extra tool*. Without management technology, managers' and professionals' decisions are invariably unreliable and inconsistent. Their decisions typically contradict their priorities, which contradict their objectives, which in turn contradict their allocations of resources, which contradict what they actually do. Group decisions usually contradict everyone's views. In consequence, managers and professional spend their working days correcting and compensating for muddles which arise from contradictions built into their decisions and plans at the outset. Management technology provides a fast, reliable means of resolving these contradictions and conflicts to achieve more coherent, effective decisions and plans. It is essential for effective management of human services.

Computer Telecommunication in Social Work Practice

Bill Allbritten, Rosemarie B. Bogal-Allbritten

This presentation will offer an overview of tele-communications functions which a computer can perform that are of service to the social work professional. The following areas will be explored and demonstrated: First, remote database access for research purposes; second, electronic mail; and third, local computerised information exchanges. The use of remote databases provides the social work profession with the capability of accessing very large amounts of information on a given topic in a short period of time. Additionally, the professional using computer telecommunications in this respect has the advantage of, in many instances, obtaining information prior to its appearing in print.

The presenters will demonstrate several of the human services orientated databases on Compuserve Information Services. These will include databases related to bibliographic retrieval, handicapped information and human sexuality. Second, the presenters will examine the advantages presented to the professional by the use of electronic mail. Specifically, the speed and confidence inherent in electronic mail will be demonstrated. MCI mail will be used as a demonstration package.

Computer Technology is Opening the World of Print to the Blind

Jan L. Ames, Alan R. Benston, Rochelle D. Denke

Computer technology has made the automated circulation system of the Washington Library for the Blind and Physically Handicapped accessible to a blind employee. A voice synthesizer, a personal computer, and the necessary software programs interface with the Library's automated system to make this access possible.

The Library circulates equipment and books and magazines in recorded, brailled, and large print formats to almost 8,000 print handicapped patrons throughout the State of Washington. The Library uses a circulation and inventory system developed by Data Research Associated (DRA) especially for libraries serving the blind and physically handicapped. This DRA system runs on a mini mainframe (a VAX-11/750 from Digital Equipment Corporation) housed within the library.

Access to the VAX and the DRA's circulation system is provided by an IBM personal computer (PC), a DECtalk speech synthesizer, and a Thiel braille embosser. Software includes an Enhanced PC Talking Program, which turns the PC into a talking computer, and PC-VT, which makes the PC work as a terminal. A blind employee is able to enter book titles, activate new borrowers, answer patron enquires, and fill patron requests, either in person or over the telephone.

Making the Library's automated system available to a blind employee is the first phase of making the system accessible to Library users throughout the State.

Data Based Service Delivery System

William M. Ammentorp, Warren Block

Most databases maintained by human service organisations are built on what has been called a 'so what' principle. Detailed client histories and assessments are collected and filed to produce reports of client conditions. Rarely do these data lead to diagnostic decision making and/or active treatment of the client. Individual and summary reports drawn from the databases of these systems often do not answer service delivery questions; rather, they simply ask 'so what?'

This paper describes a data based service delivery system which assists clinicians and direct care staff in translating client information into realistic care and treatment plans. It effectively provides a relevant answer to the 'so what?' question by linking client condition to treatment. The system uses hand-held data collection devices to assemble service episode data which are aggregated across the organisation. The aggregated data are used to derive client case types which drive both individual care planning as well as facility case mix management.

The system has widely been used in case management for developmentally disabled clients and nursing home residents in the United States. Several states now utilise the system to develop individual habitation plans for clients. In two of these applications, aggregated data are used to shape rate policies and case mix guidelines. More importantly, the data collected in the system have been used to identify appropriate treatment for clients and the resources needed to deliver care.

In these applications, client assessment data are used to arrive at a profile of need. This is, in turn, input to a diagnostic routine which identifies treatments appropriate to client condition. The resulting care plan gives direct care staff specific instruction as to those interventions likely to be successful with each client.

At the operational level, the system utilises bar code technology to monitor each service episode. Thus, accurate information is obtained as to specific services provided each client as well as time and task data linked to each staff member.

Episodic data are collected and passed to a personal computer to become part of a facility database. These data form a baseline for client case management. They also enable facility managers to carry out case mix management wherein staff and resource allocation decisions are adapted to changing client needs. In addition, data aggregated across facilities have been used to conduct clinical studies of incontinence, behaviour disorders, and other client problems; thereby addressing the 'so what' issue.

The Use of Information Technology in Human Services: Strategies, Borders and Effects in the French Speaking Part of Belgium

Alain Anciaux

The use of information technology can be helpful in developing human services, mainly in the field of social services and

social work (community activities). But the social worker needs a framework to develop the interest to use those technologies (microcomputers, home computers, interactive teletext, video cassette recorders).

A general framework can be proposed concerning priorities, task definition, possibilities and socio-cultural backgrounds of the users.

This framework, linked to the analysis of different experiments in Belgium, reveals three topics: strategies, borders and effects.

The strategies are: integration, co-ordination, collaboration. The borders are: time, money, space, non-existent software or hardware policy, culture. The effects are: the convex effect, the concave effect, the tribe effect, the utopic effect, the uchronic effect, the hypnotic effect.

This framework is useful for the social worker and for persons using such social services.

This presentation is linked to the theoretical and practical topics I have presented during the European expert meeting ("The impact of the information society and new technologies on the family") organised in Berlin in 1985 jointly by the European Centre for Social Welfare, Training and Research and by the International Council on Social Welfare.

Human Services and Information Technology in Swedish Local Authorities: Experiences and Developments

Karl-Erik B Andersson

Swedish local authorities play an important role in delivering human services. This area was long without support of information technology, but with the introduction of database technology and computer networks at the end of the 1970's the development started for human services. New social information systems and applications could now aid in the placement of children in day nurseries, placement of pupils and teachers within the school system, etc.

An important advance was the development of systems for planning. Another important consequence of expanded computerisation is a greater capacity to monitor efficiency, goal attainment and economy.

A further interesting development was the move from handling figures and statistics to using office information systems (including word processing and graphics).

Information Systems and Human Services

Interactive and database orientated systems are used for school administration, children care administration, the administration of care for aged people, etc. The utility of these systems have been assessed and data show a benefit/cost ratio 4. The gains are found in a more efficient (productive) administration and in better utilisation of resources. All these systems are connected to a common resident register. In that

way it is possible to avoid double recording and save time. The systems are also in some way integrated with personal administration (pay-roll), accounting and financial systems. Originally the systems were developed for mainframes but today some of the systems are available on PC's or are under the concept of distributed ADP.

Developments of Decision Support

Until now the main applications have been used to make administration of human services more efficient. But local authorities have discovered that information is a resource in itself. Data are created in the operations of the departments. And these data can be aggregated to information for those who are responsible for managing human services.

Important considerations to be made are:

- A. Data quality
- B. The right sort and amount of information to be selected.

The practical use of decision-support is

- monitoring the results of activities
- consequence analysis
- "What happens if" question
- planning
- communication with persons and groups (electronic mail and conferencing).

The Development of Human Services and Organisation

The internal organisation of local authorities will be changed in Sweden. The strong trend to decentralise decisions and responsibilities is now in some way a challenge to the use of information technology. Instead of traditional vertical, sectorial and hierachichal organisation we will find lateral, client orientated, district-orientated and flat organisations. Some local authorities will be organised according to geographical principles, where each district is responsible for all human services and has a political council. Another trend is to make institutions result-orientated and independent.

The overall goal is to make it possible for the citizen to participate and influence decisions at the local level.

By using information technology it will be possible to reorganise the local authorities and increase the total performance. How to unite decentralisation and rapid computerisation will be discussed during this seminar.

Questions to be Discussed at this Seminar

1. Information technology as a tool to meet needs from clients/citizens and interact with service providers through information systems.
2. Information technology as a tool to increase citizens participation in decision making of human services.
3. Information technology as a tool to make human-service departments more efficient, productive and competitive.

4. New directions for the development of information technology application in the human services.

Computer-Aided Process of Monitoring Task-Centered Family Interventions

Anat Ben-Zaken, Rami Benbenishty

This paper presents a computer-aided system to monitor and evaluate family interventions. The aim of the system is to help integrate systematic data collection and analysis with clinical practice.

Social work trainees in a welfare agency in Jerusalem, Israel, use the system to monitor their task-orientated family interventions. Each practitioner uses a simple AB single case design to monitor clients. Each family unit is assessed periodically, using the McMaster Clinical Rating Scale, and a goal attainment scaling. At the end of treatment and at two follow-up points, the families are interviewed to assess client perceptions of outcomes. In addition, practitioners report on the socio-demographic characteristics of the families, and on the specific interventions that they use with each family.

The data are fed into the computer that provides feedback as to the status of each family, as well as time-series graphs that indicate changes over time. The data from all cases are then aggregated to monitor the whole caseload and to help evaluate the effectiveness of the program. The complete set of data allows the statistical analysis of the relationships between client characteristics, interventions, and outcome measures; thus, for instance, we found that at a certain point in time, young families showed more improvement than older ones, and that a certain combination of techniques was associated with more positive outcomes.

This system was originally on a mainframe computer. This caused delays in feedback and created a split between the practitioners who reported on clients and research assistants who were responsible for data processing and interpretation. Consequently, we designed a database on a personal computer which is fully accessible to each practitioner to enter data and to generate needed output. In addition, the data set is fed into a mainframe computer to allow more sophisticated statistical analyses.

The paper discusses the impact of the system on training and supervision and presents preliminary findings of a study on changes in trainees' attitudes toward the use of computers in clinical practice following exposure to the system.

The Design of Information Systems for Practitioners in Social Intervention Agencies

Rami Benbenishty

This paper analyses the information needs of practitioners in social intervention agencies and describes an approach to the design of information systems to meet these needs. Two applications are presented to illustrate the approach and its potential benefits.

In the analysis of the information needs of practitioners in agencies the paper identifies three main domains - population, interventions, and outcomes; 2 levels of analysis - descriptive and correlational; 2 units of analysis - the single case and aggregated data; and 2 time frames - current and cumulative/historical. On the basis of the analysis, the paper suggests how to design clinical information systems to monitor agency interventions. These systems are built upon the input of the individual practitioners in the agency who report periodically on each of their clients. The inputs from all practitioners are then aggregated and processed to generate immediate outputs to the practitioners and to the agency leadership.

Two applications of this approach are presented in some detail: a system for a centre for treatment of young families in Jerusalem, Israel, and a system for a residential treatment facility for children in Livonia, Michigan. Examples of outputs are presented to illustrate how such systems can meet the identified information needs.

In the discussion, the papers discusses issues of implementation, and the possible impact of such systems on clinical judgement.

Social Work: New Roles in Computer Information Services

Marie di Benedetto, Viola Pirie

The presentation will describe the technological and professional challenges met by two social workers who developed a Health Resource Centre for a major insurance company. The Centre, which operates similarly to an Information and Referral Service (I & R), has the capacity to identify almost any health or social service agency within the United States. Information provision is targeted to the treatment as well as prevention of illness. Local and national resources on concrete (i.e. transportation), educational, medical, self-help services, etc., are provided after a careful assessment of client needs. The Centre serves a variety of lay and professional groups including hospital discharge planners, the company's managed care nurses, and a select general public.

The presentation is divided into three sections: the first section will discuss the insurance company's rationale for developing the Health Resource Centre and for selecting social workers to accomplish this task.

The second section on social work limitations will be discussed in terms of past professional roles, orientation, and training. Conflicts that developed as a result of being in a host setting and its effects on database development will also be incorporated. For example, while social workers are familiar with networking with other agencies in order to obtain appropriate community resources, they lack knowledge regarding the use of computer hardware or software needed to organise such resources. Also, social workers are accustomed to advocating for social change, but within an insurance company, although they could identify resource gaps through the use of computers, they were unable to advocate outside that immediate system.

The final section will analyse the strengths and weaknesses of the information service and its impact on the individual consumer. One strength is that computerised resources provide quick access to a large data source, useful to the variety of populations served. However, because the insurance company excludes information provision on certain agency types, such as chiropractic services, staff are unable to provide an unlimited realm of resources. The information, though, which is provided assists individuals relating to the health care field in making more informed choices about their health.

Relevant literature from the fields of social work, health care, and information technology will be included in the presentation to further clarify the challenges met by the social workers.

Development of Statewide Interactive Public Health Information System for Planning, Programme Management, Research and Evaluation

M. Sue Benford

In virtually all endeavours focused on evaluation of clinical services and the quality of service delivery there exists an underlying need for accurate, up-to-date, and accessible data. Computerised systems have been called upon to improve both accuracy and availability of large volumes of medical data. Their basic function has been to store and analyse defined characteristics of individual client records and to link significant information between separate records and, interactively, to separate systems.

In the late 1970's health service researchers proposed a direction to those in the health care technology field which prioritised the development of out-of-hospital management information systems. Several projects were funded by the Federal Health Services National Centre for Health Services Research and Development (NCHSRD) to develop a system capable of interrelating vital and health service data, demographic and socio-economic characteristics of defined populations, usage of health care manpower, and sources and methods of payment for services.

Attempts to design such a system revealed two widely recognised problems: data available lacked uniformity and, that which was available, lacked a simplified mechanism for coordination and comparison.

Recently, public health consciousness has been aroused with the focus of research on minimum data sets and key indicators for determination of progress toward national Maternal and Child Health goals. The big question - "are federally funded MCH programs making the anticipated and needed impact?" remains unanswered.

With the advent of block grants to states in 1981 many critical questions related to service delivery, outcomes of care, and impact of dollars, challenged those responsible for setting program direction, standards, and outcome criteria. Clearly, without data reflecting program activities and a system to coordinate and compare them, objective analysis is impossible.

It was this lack of available data and a system to access and use the data that led to the creation of the Maternal and Child Health Information Network (MATCH) project in Ohio.

The objectives of MATCH include 1) to design and implement a useable database among all funded MCH programs throughout the state; 2) to correlate data items into pertinent information for state, local, federal, and private agencies; 3) to establish an interactive computer system between the state and local agencies for sharing of data and resources; 4) to link data and statistics and other relevant data. Funded by a SPRANS* award, this program is acting as a demonstration for other projected interactive database systems throughout the nation with strong implications for international technology transfer.

Discussion will focus on: creation, development, and implementation of uniform datasets; microcomputer and mainframe useage in a non-technical environment; distributed processing and retrieval system design; cost effectiveness of Public Health Information Systems; additional useage of interactive computer systems beyond the initial application; and International transfer of a system similar to MATCH.

* Special Project of Regional and National Significance, Division of Maternal and Child Health, Rockville, Maryland.

Consumers, Computers and the Public Service: An Overview of European Trends

Evelyn Blennerhassett

In the public service, it is often assumed that, because technology has streamlined internal administrative procedures, the effects on service to the citizen must be equally beneficial. The findings of a cross-national European study of the impact of technological change in selected public services (principally, social security, employment services and population registration) challenge this assumption. At best, there was a slight improvement - or, at least, no deterioration in service; at worse, some quite significant disimprovements were experienced by particular client groups.

While there were some examples of innovation, most changes were relatively minor. The main objective was to reduce administrative costs associated with providing existing services rather than to create new services or improve current services in any fundamental way. Many of the negative effects on client service could be traced to inappropriate organisational structures, lack of training and planning for computer systems, and inadequate management, rather than to faults in computer systems or bad work attitudes of employees.

An issue of social concern arising from the research is the relatively low priority being given currently to client service aspects of computerisation. At best, such considerations seem to be of secondary importance in the planning and implementation of systems. Wider issues, such as data protection and privacy and the use of technology as a mechanism for social control are rarely discussed. In general

public service policy-makers and managers tend to adopt a conservative, fairly narrow view of the use of technology in the public service.

Design Issues for Decentralised Social Service Information Systems

Shawn M. Bowles

Social service organisations, including educational institutions, are members of the class of information systems called 'information intensive'. As such, they are characterised both by their complexity and by their reliance on information for their operations. These organisations rely on information to make decisions about the services they provide - decisions defining service goals; identifying strategies for achieving the goals; allocating resources; and analysing the organisation's performance. Recent advances in microcomputer hardware and software have resulted in powerful, yet reasonably priced tools for building information management systems accessible to organisational decision makers. At the same time, researchers have developed increasingly precise models of service delivery processes and indices of organisational performance. These advances, when linked together, provide opportunities for organisations to use microcomputers to collect, aggregate, analyse, and distribute service-relevant information to decision makers in ways that enhance both the effectiveness and efficiency of the organisation's performance. Using a systems life cycle approach, and drawing on a series of real world examples, several issues that confront the designers of small-scale decentralised programme management and information systems are addressed. These include: defining the domain of intended use and class of intended users of a system; specification of the user needs in a multiple user environment; user interface design considerations; implementation and user training; integration with other user tools; and system maintenance techniques using telecommunication packages to provide 'technical assistance at a distance'.

Influences on the Development of Computerised information and Knowledge Systems: An International Case Study

F.H. Bolltho, N.J. Smith

Similar technological innovations in the field of information processing, have developed in different countries within comparable time spans. The application of the technology to information processing tasks in the human services has, however, been more country and setting specific. That is applications have been influenced by particular and specific contexts. Using the UK, USA and Australia as cases, this paper will show the effect of legislative and administrative contexts on the development of information systems in human services.

The USA was heavily influenced by legislation which emphasised the need for programme and agency accountability. In the UK, the effect of administrative

reorganisation of local authorities and social services departments played an important part in determining the kind and type of human service information systems. But in the case of Australia, whose organisational and legislative context is a mixture of both the USA and UK elements, information system development has been effected principally by software engineering accompanying the emergence of the micro. It has missed the major influences of large mainframe systems on information system building in the human services.

It will be argued that as a result of change in the purposes information will be required to serve, coupled with conceptual developments in the field of knowledge engineering, more inter-country commonalities will start to emerge. Having achieved the ability to group and order data to meet organisational needs, attention is now being given to manipulating information in order to emulate professional judgement contexts.

To this end, conceptual frameworks currently being used in AI are increasingly being used. Both the rationality behind work on professional judgements and the cognitive science approach of AI transcend country specific contexts. The evolution of the use of computers for data analysis, information systems and integrated tasks has been a preparatory stage to one in which information will be used to widen and extend our conceptual understanding of a range of phenomena in the field of human services and their provisions.

Rise or Fall of the Expert: The Position of the Service Worker in a High Tech Environment

Hans Brinckmann

In our empirical survey of different fields of human services in the Federal Republic of Germany, we found a widespread use of information technology (IT): the higher the degree of regularity and repetitiveness, the more quantification instead of quality measurements, the better the reduction of complexity and uncertainty, the more likely is the integration of technology in the service tasks. Whether a service is structured in this manner or otherwise, is not a quality of the service itself, but the result of a tradition, a political or professional decision, or the rationalisation within a branch or a single service unit. The social problem or the need of the client is by far not the only determining criterion.

The application of IT in services will be without major effects on the service quality only where former steps of rationalisation and bureaucratisation took place. These are the fields where we find nowadays the bulk of computer usage. In the other fields the service tasks have to be restructured and adapted to the requirements of IT. This does not work without crucial changes in the delivery of services. Whenever you took a technical instead of an organisational or service orientated approach - what seems to be a regrettable rule in larger institutions - these changes are not in focus. They are to be dealt with later as so-called external factors.

For the clients of human services IT presents a wide range of self-service potentialities; it implies the possibility of reducing the position of experts and of control. But our findings show that the computer-wise service worker will more likely extend

and strengthen his position in relation to the client and in the service market as well. One reason for the little chance of self-service should be seen in the higher degree of complexity going with the typical computer application.

The presentation of a wider range of services goes with a sophisticated use of IT but is resulting in a need for broader qualification. This and the costs of investment and maintenance will favour larger institutions or a new division of labour in the supply of services. We will find specialised agents for computerised services. If they get a progressive image, they will gain the more profitable share of the market. On the clients' side this tendency could intensify social differences in the reach of services.

Computer Assisted Life Review

Helen Brown, Richard Reinoehl, Linda D. Iroff, Thoman Hanna

Computers have had minimal direct application with elderly populations, which is unfortunate when considering the many possibilities. One such application is the use of idea processors to facilitate life review, a process of writing and rewriting the scenarios of one's life, which facilitates dealing with a major developmental task of old age: resolution of the conflict of ego-integrity versus despair. Integration and acceptance of one's life history leads to a state of ego-integrity and satisfaction; despair is the result of the failure to integrate. Idea processors (also called outline or thought processors) provide a means for organising and reorganising thoughts, both textual and pictorial. They allow the user to create outlines and freely reorganise headings and subheadings. Other features include the ability to attach text or graphics to a heading, sort through and prioritise lists, expand or contract the outline to view any level of headings, e.g. major headings or specified subheadings, and link the material to a word processor. These abilities of idea processors can be further enhanced by preparation of a template which would stimulate memory and place the review process into a therapeutic context. Stimulating the memory of an elderly user can be accomplished by incorporating past, local, national, and international events into an idea processing file. Creating a therapeutic context would involve providing textual and graphic images that would enhance an individual's understanding of personal, family, and social processes in a manner that would help resolve past conflicts. Such templates are easily modified in response to local events and ethnic conditions and easily duplicated for organisational use. This discussion demonstrated how inexpensive, off-the-shelf programs for desktop computers can be used to improve the emotional well-being of elderly individuals. Perhaps this example will stimulate more direct computer/client applications that have the power to enhance the final stage of human life.

ASSIA: Applied Social Science Index and Abstracts - A New Service for Practitioners and Theorists

Peter F. Broxiss

The background of this new service, launched April 1987 and designed to cover the information needs of all those concerned

with the social services in the widest sense of the term, is described. ASSIA covers over 500 English language journals from some 16 countries covering field as diverse as social welfare, social work, psychology, family therapy, housing, law, demography, planning, special education, community health, and probation and prison services.

ASSIA is unique not only in its wide coverage but also in that it is probably the first large-scale indexing and abstracting service to be published using computer technology from the outset. A description of the way in which the initial input is carried out using a microcomputer and the various stages this input subsequently passes until finally camera ready copy is produced by phototypesetting will be presented. An outline of the interface between the indexer/abstractor and the microcomputer will be provided.

A brief description will be given of the way in which cross references are generated from the main subject headings together with the way in which generic-to-specific relationships are displayed for terms appearing as heading and reference points.

The final section of the paper will indicate possible future developments which are likely as a result of advances made in information technology. These developments include on-line searching, compact disc and the production of tailor-made subsets.

Applications of Information Technology in Social Work Education

**Beverley J. Buckles, Gunther R. Geiss,
Joseph L. Vigilante**

Are social work educators in the United States rising to the challenges of a 'high tech' society? A national survey of the faculties of graduate schools of social work in the United States has been conducted under the auspices of the Doctoral Division of Adelphi University School of Social Work to assess the status of infusion of technological innovations in social work education. The results of this research indicate that some social work faculties are opening the doors of our educational institutions to technological advances. Though the present status of social work is considered essentially pre-technological, reported applications indicate that social work faculties are at many different levels, but all in the early stages of using new information technologies. The knowledge and the willingness of social work faculties to use these new technologies in social work education exceed anticipated levels. In fact, applications of new information technologies which offer promising new methods of effectively teaching the gathering, processing and communicating of information for professional practice are being explored.

This study answers many fundamental questions about faculty knowledge and attitudes toward the dominant types of information technology, and reports on experimental and normalised (on-going) application of these new technologies in social work education. It also explains the length of time and extent to which these applications have been in use in schools of social work. But perhaps as important, the findings of this

research point to critical questions now facing social work educators, including:

How can social work education employ these new technologies in carrying out its mission?

Will current applications benefit student learning?

Will current applications address the needs of professional practice and be transferred to the provider level?

Will current applications enhance direct client services, organisational functioning, social research and eventually alter public policy?

What, if any, barriers exist which hinder the normalised use of these new information technologies in schools of social work?

The current involvement of social work in exploring applications of new information technologies for social work education suggests that a commitment has been made and it requires that these questions must now be addressed. Toward the end, this presentation of these research findings will move beyond identifying current applications, and will provide a framework within which the potential impact of application of new information technologies for social work education can be explored.

Developing an Information Management System for an Employee Assistance Programme

Guy Cage

One area in which technology has been applied in the Human Service Delivery System is Information Management. With the expansion of computing capability has come an increasing interest in collecting data and using it to report, coordinate, and plan programmes. The Information Management System (IMS) is the computer program that accomplishes these aims. Some IMSs have been developed and are available commercially. However, the requirements for an IMS vary from agency to agency and sometimes it is necessary to develop the system.

This paper is a description of the steps taken to develop an IMS for an Employee Assistance Program. The subjects covered are: selection of the people to perform the effort, definition of goals of the effort, and implementation of the system. The implementation consisted of writing a specification, reviewing the specification, designing the database, writing the menu driven program, testing the program, and writing a user's menu guide.

Implications of Information Systems for the Distribution of Authority and Decision Making in Human Service Organisations.

Richard K. Caputo

This paper is based on the presenter's book, *'Management and Information Systems in Human Services'* (Binghamton, New

York: The Haworth Press, 1987). It assesses the influence that the use of computers and the implementation of information systems have on the distribution of authority and decision making in human service organisations. The paper argues that the increasing use of information system staff and their elevation to higher status supervisory and administrative levels lead to greater independence among functional units in an organisation. Further, this increased functional interdependence enables a rational, integrative and comprehensive way of thinking about the organisation and delivery of human services that differs from the more traditional bases of making decisions about programmes, namely, professional judgement, practice wisdom and precedent.

Developing Information Technology Applications with Unwaged Groups: Empowering the Receivers

Catherine Cassell, Mike Fitter

In 1985, with financial support from Sheffield City Council and the European Social Fund, the Sheffield People's Resource for Information Technology was established. Known as the SPRITE project, its aims are:

- 1 to work with non-employed people in their communities to develop skills and experience relevant to their collective needs;
- 2 to develop information technology products useful to community based groups, that would be unlikely to be available in the commercial market place; and
- 3 to make some of the City Council's IT resources more useful to community groups and individuals, by providing them with the necessary skills and confidence to define their information needs.

SPRITE is currently operating in six community centres in Sheffield. In each centre computer familiarisation courses are provided for groups of interested users. The training focuses on the use of specific packages that will be relevant to the users, and functional for the centre. This requires considerable flexibility within the curriculum, and the involvement of users in its development. Once the initial training has been completed the users begin work on practical projects.

The SPRITE project is being evaluated within a stakeholder framework using the techniques of action research. The paper describes results arising from the project, focusing on the following issues:

- 1 Pro-activity and participation Typical images of unwaged people are as passive and impoverished consumers. Is it possible to empower people and facilitate their active participation in the development and use of information technology?
- 2 Process evaluation How effective are the action research methods in making the project responsive to user needs?
- 3 Personal skills What influence does the SPRITE project have on the users? Are new skills and self-confidence

developed, not only in technical aspects, but also social and organisational skills?

4 Product development Is SPRITE successful in its aim of developing new IT products for community use, and do these differ from products developed in the normal commercial market place?

5 Providers of services The development of 'community information' applications (e.g. housing, leisure and social services) could have consequences for professional service providers. Seen as part of the move towards decentralisation of services, what are the implications of empowering the receivers for the jobs of the service providers and their relationship to the receivers?

Socio-Technical Problems in Implementing Office Automation Systems in Welfare Offices

Bill Clement

This paper describes the development of a training seminar for welfare administrators who would have the responsibility for managing the implementation of micro-computers in a multi-level human service agency. The planned activity used a managing change approach around issues associated with integrating technology and the social organisation. The bureaucratic system's issues confounding the planning process are examined. The paper will present the final design, including a summary of major topics addressed by the workshop as well as a representation of handouts used. Planned training outcomes and actual training outcomes will be compared. A generic design for managing socio-technical change will be reviewed.

Some conclusions are drawn on if micro-computers can be used creatively within a bureaucratic structure, and if so, how.

Critical issues in planning a socio-technical training programme will be defined.

Computer Illiteracy and the New Roles of Human Services

Ram A. Cnaan

It is evident now that computers are becoming the most important and widely used tools. More and more daily activities and job-related activities are based on computer literacy. At the same time computer use is generating new social problems and negative consequences, one of the most important of which is computer illiteracy. The presentation will focus on the causes for computer illiteracy, its victims and consequences over time. Finally the new challenges confronting human services with regard to eliminating and preventing computer illiteracy will be discussed.

Computer Assisted Clinical Supervision

Ram A. Cnaan

Supervision is a key function in most human services. Traditionally there are three types of supervision: educational (clinical), administrative, and emotional. It is suggested that even with fourth generation computers a large share of educational and administrative supervision can be performed by computers. The method is based on self-learning from experience and diffusion of knowledge. Computerised supervision provides each worker with a printed message when a relevant category is entered as data regarding one of his/her clients. The presentation will focus on the principle of computerised supervision and on how one human service organisation is working to apply this new method.

The Evolution of a Computerised Social Work Information System

Charles Cohen, Arthur Nizza, Barry Rock, Michael Smith

Based on the factors of cost containment, accountability issues and the availability of relatively inexpensive computer systems, the Department of Social Work Services at this large urban medical centre has made a decision to design and implement an integrated information system. This system has been developed over the past three years and will include a social work statistical reporting system, discharge planning system, research package and word processing capability.

The purposes of this paper are: (1) to briefly review the available literature on the state of the art of developing social work information systems, (2) to present the history and process of the overall program development, design and implementation, and (3) to present a preliminary qualitative analysis and sample reporting formats of a pilot test of the system. This is based on processed data on 213 cases collected during a test run of the system. The present system is based on a computerised social work statistics program which utilises problem definitions, social work interventions, problem outcomes and problem resolutions as the means to capture social work service delivery and patient care. In this way, elements of both quantity and quality of social work delivery are expected to be captured.

The automated system is based on the belief that a well defined social work information system is an essential tool in the present environment, since it includes: (1) the means for more effective and efficient discharge planning services for patients, (2) the means for documenting services provided as well as costs, and (3) the means to monitor the delivery of existing services as well as the impact of gaps in services.

The process of developing such a system is lengthy and complex. The staff of this medical centre have spent several years in reviewing the relevant literature as well as studying various operational hospital based social work systems in the metropolitan area. The design of the system has required the

distillation of this 'collected wisdom' as well as the formation of several committees representing all levels of staff.

Prior to implementing the system on a hospital wide basis a decision was made to design, implement and evaluate a pilot test. The pilot system included the design of a preliminary system with some 80 variables on intake, closing and processing records; the utilization of several software packages including DBase III plus, DW3, Lotus 1-2-3, SPSSX and SPSSpc+; IBM AT and XT microcomputers; the development of some 25-30 standardised report formats including frequencies, cross-tabs, bar and pie charts. This pilot study directly involved eight social workers and 213 patients in various divisions and service locations of the hospital.

Once this data was collected, processed and analysed the sample report forms were presented to the appropriate committees for feedback. Their suggestions and concerns have been incorporated into a final report including a qualitative analysis of the pilot test which will guide the design and implementation of the overall system.

Process and Products of an Information and Referral System that Works

Valerie D. Cook

The principles of Information and Referral database design affect maintenance procedures and customer access. Procedures used for maintaining data will be identified including indexing methods and guidelines for inclusion, all of which determine the quality and depth of information. With a well maintained system, on-line access and other data services like special reports, directories, and labels can be developed to address many customer's needs and expand the effectiveness of the Information and Referral service.

Integration of Computerised Applications in a Child Welfare Agency

Charles R. Cooper

This paper describes how a new citizen agency designed to monitor children's foster care has, in its seven years of existence, integrated modern information processing methods into many aspects of agency operations. Detailed cost-benefit analysis was the key to computer acquisition in a difficult bureaucratic environment. Integrating computers into social work staff functions requires planning and adaptability regarding staff training, staff attitudes, and the effect of new technology on various aspects of the work life of the agency.

Aspects of successful integration in an environment with technologically naive users include: in-house design and development, informal design process with user participation, direct access to computers for professional staff, use of modern hardware and software technology, conscious encouragement and aid for staff who want to gain computer skills, and careful balancing of objectives among management and staff uses. These principles are contrasted with barriers

to successful automation within the large-scale social service delivery system.

Applications are discussed and illustrated by use of printed outputs. The client database is a valuable tool for oversight and advocacy in child welfare. The information system has become an indispensable part of citizens' efforts to improve the quality of life for foster children.

Claimant Information Demonstrator: Problems of Cross-Boundary Communication

Elizabeth S. Cordingley

The DHSS Demonstrator work at the University of Surrey is one part of a collaborative project to develop knowledge-based decision support computer systems to demonstrate the value of advanced information technology for large, legislation based organisations. The project is funded for five years 1984 - 1989 as part of the Alvey Programme and involves collaboration between two industrial firms, three universities, and one department of the UK central government, the Department of Health and Social Security (DHSS).

The overall task is to design and build a number of demonstration systems based on the application of human computer interaction (HCI), intelligent knowledge-based systems (IKBS) and software engineering (SE) 'State of the Art' techniques to operational, communication and policy development problems of the example Department. One of the three separate demonstrators which will be produced is the Claimant Information Demonstrator being developed at Surrey to facilitate communication between claimants and the Department. It is being designed to be useable by members of the public, and will be able to advise on the likely eligibility for welfare benefits, the amount a person could expect to get, the procedures that should be followed to claim a benefit, and the documents needed to provide support for a claim. It will also offer help in filling in the appropriate DHSS forms.

Among the problems being addressed at Surrey is a special case of the more general problem of cross-boundary communication. It arises out of the knowledge acquisition and validation process. Whether the knowledge is taken from documents or individuals, it must be represented in ways which are useful to knowledge-base builders and can be checked by people who are knowledgeable about the domain, here welfare benefits, but who are unlikely to have experience of designing or specifying computer systems. This paper reports recent work devising a representation which can be intermediate between systems designers/builders and domain 'experts'

Acknowledgment

This work was carried out as part of the DHSS Large Demonstrator project, supported by the Alvey Directorate of the UK Department of Trade and Industry (DTI) and the UK Science and Engineering Research Council (SERC). The project collaborators are ICL, Logica, Imperial College London, and the universities of Lancaster and Surrey. The assistance of other project members especially Mick Pappas is gratefully acknowledged. The views expressed here are those of the author and may not necessarily be shared by other collaborators.

OPTEXT Adventure System: Computer Aided Counselling

Les N. Cowan

Communication is a perennial problem in work with children and young people. Whether the issues are to do with offending, truancy or preparation for family placement the communication barrier must be overcome first before the real work even begins. Face to face discussion may be a foreign medium to the child and shyness, poor language skills, or just sheer boredom can all effectively kill a counselling session leaving the issues unresolved.

When it comes to computer/user interaction the younger you are the more literate you are likely to be. The medium is familiar and gameplay is interesting. How can this familiarity and attraction be utilised in counselling situations?

OPTEXT is an adventure game system which aims to stimulate real circumstances, dilemmas and choices within a computer game. Because of the techniques adopted OPTEXT can be used to parallel almost any situation and set of choices appropriate to work with the client concerned. The game screen allows for a text introduction at every stage and up to three choices resulting from it. According to the choice made, the users not only find out the consequences of their actions, but also the new choices available. Up to ninety-nine such "cells" can be created linked by the options available to any other cell - including itself. Hence a "model world" with probable outcomes of all sorts of actions can be created. Users and counsellors together can discover the consequences of certain behaviour and can then think about how they might tackle the dilemmas facing them back in the real world.

By "playing the problem through", benefits are available to both clients and counsellor alike. The child preparing for family placement can see the results of stealing, perhaps. The I.T. group can watch the juvenile justice system at work. The youngster with family problems might even rerun his/her most recent row taking different characters every time to think about how people feel. Meanwhile the worker has an interesting and attractive medium to work to, discussing the options as they develop and using the story to help focus the issue.

OPTEXT scenarios are written from entirely within the programme, with full editing facilities and a "data map" to keep track of cells and their interconnections. A library of prewritten scenarios can be accessed from disk. OPTEXT at present runs on an Amstrad CPC 6128 micro.

Use of Computers in Health Systems Research in India

J. Christopher Daniel

In India the delivery of health care services is mainly through the complex of Government-owned Primary Health Centres and Hospitals in rural areas. Eighty percent of the population live in villages. The overall picture of health in India is a mixture of outstanding achievements offset by grave failures. Deplorably,

the health programmes have suffered for want of an effective system for integrated planning, scheduling and control.

Problems of health, factors associated with such problems and approaches to health care could be analysed under Health Systems Research. Health Systems Research is concerned with strengthening the means of health promotion and health care. It is one of the inputs to study the etiology of diseases and improve health status of the people. It is very useful in developing health indicators on the basis of which any health care programmes/projects could be planned, implemented and monitored. It bridges the gap separating knowledge and action in health.

Computers have an important role in the health systems research. Among their various applications, computers are found to be very useful in HSR for improving the quality and quantity of health care. While planning and organising any health programme/project, the use of computer-based data processing is of great importance, without which the health management personnel will be seriously handicapped, for want of **reliable data and information**. Programmes/Projects undertaken at large scale necessitate computer applications for collecting day-to-day information for operational management and implementation. Governmental and non-governmental organisations and Schools of Social Work in India engaged in human development programmes use computers or seek consultancy services in computer centres for effective planning, execution and evaluation, and foreseeing future action to be designed. Needless to say, the far-reaching advantages of computers to support humanity cannot be gainsaid or neglected in the context of the Indian health care delivery system. But the awakening of 'computer application' in health systems research is yet to catch up in a big way in India for want of computer facilities.

Schools of Social Work in India, in particular have a vanguard role to play in developing human service information technology which should be incorporated as a 'social work component' to support humanity. Effective utilisation of human service information technology and its application in the area of health programme management and health systems research will benefit not only the people but also help develop health indicators for monitoring progress towards health for all by 2000 A.D. in India.

Enhancing Equity in Service Delivery to Minority Populations

Mary E. Davidson

Social workers and other professionals concerned with equity and social justice in the delivery of the social services can benefit from the application of information technology. The technological sophistication of tools available to those who would monitor public social policies and programmes to determine compliance with laws that prohibit discrimination needs to be more widely known.

The United States Civil Rights Act of 1964, provides for non-discrimination based on race, colour or national origin in programmes receiving federal financial assistance. In Great Britain, racial and ethnic minorities are protected from discrimination by the Race Relations Act of 1976. These laws

represent the fulcrum of protection against discrimination in housing, health care, employment, education and the social services. Monitoring the implementation of public social policies and programmes for compliance with these laws through the use of information technology would allow us to compare trends and patterns in service delivery.

This paper argues that assuring equity in the social services requires that we collect and analyse data about the incidence and prevalence of direct and indirect discrimination. If we are to uncover disparity and enhance equity in the social services we must have a system for monitoring our progress. The importance of a national information system that encompasses regional and local data across policy and programme area for each protected class is underscored. The utility of such an approach is illustrated with examples from child welfare and from education. Such an approach would allow us to compare trends and patterns of compliance to various system levels and within and between societies. To do otherwise is to abrogate our professional responsibility for social justice in the human services delivery system.

SOSCIS 'Three Years On'

Malcolm R. Douglas

Within the field of personal social services, the quest for access to accurate, meaningful information goes on unabated. Information that is required to facilitate both the efficient day-to-day running of the department and allow for effective forward planning. Departments can no longer place reliance on what, in many cases, can only be described as archaic manual control systems, because the data duplication and inconsistencies inherent in such systems are all too evident.

ICL as the major supplier of IT solutions to local government in the UK, is deeply committed to the social services and has an unrivalled understanding of business needs. An understanding that has evolved through the development of its SOSCIS "family of products" (Basic Index, Residential and Domiciliary Care modules), and their integration with other business solutions pertinent to the needs of their department, i.e.,

Electronic Mail, Text Retrieval, Word Processing, Business Graphics, Diary Management, Spreadsheets.

Growth areas indeed, but just some examples of how an end-user can add value to their initial investment by utilisation of a terminal network, i.e.,

"Whilst using the same terminal, the user can access the client database, send memos via electronic mail, check availability of colleagues for meetings, retrieve textual information relating to procedures, produce graphic outputs for management and of course access other corporate systems, i.e. Finance, Personnel, etc."

A dream? Maybe in the minds of some, but ICL is committed to working with the end-user to ensure business needs can be met, that the tools described above can be put to effective use, within a department where the number one priority is the community it serves, but one that can no longer place reliance on manual systems to achieve its aims.

Introduction of Micro-Processors into Local Welfare Offices

**A. Solomon Eaglstein,
Menachem Monnickendam**

Consistent with Ministry of Labour and Social Affairs policy to upgrade service delivery systems via the streamlining of file management and updating, analysis and report generation to various administrative levels in the welfare system, a programme of introducing micro-processing environments into local welfare offices has been initiated.

The programme although targeted to eventually include all welfare offices in Israel, will initially be experimentally tested in three. Introduction of the project will be operationalised in a two stage process. Stage one is a running-in period in which local staff receive hands-on training in the use of the machines and begin to record basic data concerning each of the families in care. In stage two, more in-depth information is inputted and thus more detailed analysis and reports will become available.

Level of project success will be measured via a controlled experiment. A before/after treatment with control-group design will be employed. A questionnaire has been constructed and pre-tested. It includes questions in the following areas: demographic and professional features of the social workers, time and subjective effort involved in carrying out various administrative tasks, effects of the computer on these tasks and the reactions of the social workers to the machine. Pre-testing will soon be completed with first post-test following within two months of going on stream. This will be followed up by at least one additional administration. Simultaneously, at least three other welfare offices will be administered questionnaires to control for historical and other threats to internal and external reliability and validity. It might thus be expected that by the time of the conference, at least one after treatment set of results will be in, analysed and ready for presentation.

It should be stressed that the computer database program (written in MAGIC II) as it stands today was designed as a case management system, it was not designed as a therapeutic adjunct. Hopes are high however that streamlining the bureaucracy and making it more imminent will have a positive effect on professional social work.

Case Management Information: Local, Regional and Statewide Systems

George U. Epstein

This presentation is intended to summarise the impact of implementing client information systems in individual human service agencies and on state service systems.

Echo Consulting Services has implemented complete information systems at agencies throughout the United States. This includes state-wide systems where summarised data is transferred magnetically to the regional and/or state central office level, in supervision of case management teams, in management of agencies, and in oversight of agencies by state office staff. Specifically, the impact of provision of

services to clients by specified target dates is discussed with subjective analysis of the impact of documenting unmet needs on agency funding and resource allocation.

A number of findings have resulted:

1. Providing case managers with "tickler" lists indicating client-related tasks to be accomplished with target dates and days remaining or overdue, and providing administrators with reports indicating accomplishment of tasks and whether they were timely or late, resulted in prompter completion and higher rates of task completion.
2. Service needs that were found difficult to meet were documented. Individual agencies concentrated resources to resolve these problems and funding sources agreed to contract modifications.
3. The ability to attach client characteristics to reports resulted in discovery of specific sub-groups denied access to certain services. For example, clients with mobility limitations had dental services more irregularly, and clients with behavioural problems failed to participate in "leisure time" activities at the same rate as other clients.
4. The process of selecting client objectives from an easily modified menu of options, developed at the agency level, results in clearer, better written behavioural statements in the client's individualised plan

New Technology and the Consumer of Social and Allied Services - A Review of Selected European Research

Joyce Epstein

Research focusing on the impact of new technology on the end user of services in housing, social security, employment, social services, health and other areas is reviewed. Results show that when computers are introduced service delivery can become more efficient and comprehensive, and access to services - and to information about services - can be improved. Very often however the introduction of new technology has introduced a lot of new problems for the end user: services may become slow, anodyne, depersonalised, unreliable, error-prone, insecure and incomprehensible, and expected cost reductions, which might then be passed on to the consumer in the form of lower taxes, may not be realised.

Discussion of why and how technology is introduced in public services offers an explanation for the failure of technology to improve services to the consumer.

A Computerised Information System and Human Services Integration

Melissa Evans-Andris

The recognition of computerisation as a form of information technology offers humans service providers a means through which to better organise and operationalise their efforts.

Computer based systems analysis contributes categorisation, manageability, increased capacity for planning and rationality to the provision of human services.

The Human Services Coordination Alliance, Inc. (HSCA) of Louisville, Kentucky, was formed in 1972 specifically to address the issues of computerisation, coordination, and human service provision. That organisation was an early attempt to promote integration of planning of services and effective resource allocation through the introduction of systems technology to the community of human service providers. HSCA quickly became one of the largest, most comprehensive human service integrating organisations in the country.

Through extensive interviewing and surveying procedures, massive amounts of data were collected regarding service provision in the immediate community. Subsequently, distinct databases were generated and maintained. The network design was comprised of three components: a service selection system, an agency resource information system, and a service outcome referral system. From these, an Intake Screening-Referral network (ISR) was developed and marketed to human service providers in the metropolitan area. Additionally, analysis of the ISR network enabled HSCA to offer planning expertise to local decision makers. Because of its innovative approach to human services integration and planning, HSCA became nationally recognised.

Ultimately, however, the efforts of the Alliance were unsuccessful. The ISR network was plagued with problems. The data were continually outdated, and the manual products generated by the system were cumbersome and inefficient. Significantly the implementation of the system was received with great scepticism and resistance from human service providers. Generally, they perceived the ISR network as highly technical and impersonal. Moreover, the systems rationality conflicted with the "humanistic" orientation of the service providers. These obstacles, coupled with the exceedingly high cost of operation, discouraged the use of the ISR network at the required optimum level. HSCA closed in 1983.

Based on a case study of the Human Services Coordination Alliance, this paper examines the goals, methods, successes, and failures of this innovative approach to information technology implementation. Particular consideration is given to: 1) the underlying linkages between providers of a computerised system of information technology as exemplified by HSCA and consumers of such a system (i.e. human service providers and persons served), 2) the implications of computer based systems technology on the defined and perceived roles of human service providers and persons served, 3) the potential contributions of the microcomputer in enhancing the goals of human service integration and coordination and in reducing problems of implementation encountered by earlier forms of computer based information technology such as HSCA's ISR network, and 4) the important ethical issues regarding computerised information technology and human service provision.

In conclusion, this paper demonstrates the difficulties that attempts to bring organisational rationality to service delivery systems experience when they come into conflict with the

occupational cultures of service providers. The paper suggests ways that these difficulties might be alleviated or more appropriately managed when microcomputers are effectively introduced in the human service provision system.

Preparing Human Service Staff for the Automated Environment: The Connecticut Experience

**Judith M. Feinstein, Shelley Mills-Brinkley,
Peter Petrella**

The introduction of computer technology into human services forces us to plan for this technology in ways that support the ethical and human dynamics which are the cornerstone of our human service delivery system. To maximise this computer potential, it is therefore necessary that our staff who provide and support our delivery systems be trained in understanding, using, and evaluating the automated systems and the variety of computer technologies that are available. In the state of Connecticut's welfare department, known as the Department of Income Maintenance (DIM), a comprehensive training programme is being implemented to prepare the 1700 staff members for the automated environment. The success of the training programme depends on identifying the role of training in automation, establishing and securing that role, and implementing training plans and programmes which involve staff in the automation process. Currently in the state of Connecticut, the welfare department is investing over fifteen million dollars in a battery of systems and hardware to support the delivery of money payments, medical and food stamps to the welfare population in Connecticut. To support this massive effort the Department is committed to a three pronged automated approach: EMS, Eligibility Management System, a mainframe based automated integrated system for all welfare programmes; CBT, Computer Based Training using Phoenix, a mainframe based authoring and delivery system; and PC's, the introduction of microcomputers to act as sensitising and transitional tools to EMS. Securing the role of training to support this effort is both a challenge and a responsibility. With the commitment to include the Training Unit as part of the organisational development team came a series of responsibilities and tasks which are outlined below.

EMS

The Staff Development and Training Unit is responsible for the development and delivery of the overall training to support EMS. This includes: identifying competencies for EMS; designing, developing and delivering curricula for EMS; designing Computer Based Training (CBT) courses to support EMS; developing automated help screens and other system embedded training aids; developing user's manuals; designing and delivering support training that will aid staff in preparation for that automated environment; and designing and delivering both a stand-up and a computer-based training course addressing the ergonomic issues of using cathode-ray tubes.

CBT

In the area of CBT, the Training and Staff Development Unit will be seeking to accomplish two major goals: use CBT to establish competencies for the use of EMS for each level of staff and train those staff with CBT programmes to meet and

measure those competencies. In its simplest form this translates to providing a training tool which most closely approximates the environment in which the student will perform. The best way to learn the functions and use of EMS is through a CBT Programme using EMS. Also, Phoenix will be used to build in a policy training sub-system for the major entitlement programs.

PC's

The training unit has formulated a strategy to introduce the use of microcomputers into the agency. The PC user must be able to conceptualise, design applications, input data, use reports and evaluate data. To manage PC's in the office environment, a manager must be able to conceptualise, relate applications to unit goals and objectives, and manage the use of the equipment and software. Towards meeting these competencies, a series of courses have been developed that include an overview of PC's, introduction to specific software packages, (ie Lotus 1-2-3, DBASE III, Multimate Word Processing) and courses about management issues and applications potentials.

It is our intent, through a highly interactive seminar, to chronicle our experiences. We will offer practical hands-on training strategies what can be applied in a variety of environments, to secure staff commitment to making the automated environment a productive one.

Human Service Instrument Based Program Monitoring and Indicator Systems

Richard J. Fiene

Instrument Based Program Monitoring (IPM) and Indicator Systems (ICS) are information systems used in the assessment of human services. IPM/ICS systems have been implemented in child welfare, day care, and mental retardation services.

IPM systems have the following characteristics: the system uses checklists/instruments that contain highly specific questions/items. These questions/items correspond directly to a state's/country's regulations or to program quality standards. The system supports program monitoring which is the management process of conducting periodic reviews or inspections to ensure that substantial compliance with state/country human service regulations or program quality standards has occurred. IPM is a comprehensive system. Program, fiscal and statistical sub-systems can be linked quantitatively to constitute a comprehensive IPM system for human services. The advantages of an IPM system are the following: consistency, coverage of all regulatory areas, clear expectations, simplified monitoring procedures, and potential for cost efficiencies. IPM systems' standardised procedures can simplify a state's/country's monitoring and reduce the time and cost of monitoring human service agencies.

ICS systems are systems that statistically predict overall compliance with state/country human service regulations from a series of indicators. These indicators have been determined

to be most effective in discriminating between human service agencies that provide a high level of quality care and those human service agencies that provide a low level of care. Generic indicator systems have been developed in day care and child welfare services. The advantages of the ICS system are the following: it substantially reduces the burden on human service agencies especially those agencies that have a record of high compliance and program quality. The ICS system can further reduce a state or country's cost of monitoring and permit the more efficient reallocation of staff resources to other activities.

IPM/ICS are cost effective and efficient systems that can be used for the program monitoring of human service agencies at local, state or national levels. IPM/ICS systems have been successfully used in research studies in identifying key process indicators of program quality and compliance that have a positive impact on client outcomes. IPM/ICS systems have been used in fiscal studies to determine the most cost efficient means for delivering human services. And lastly, reliability and validity studies have been completed on the IPM/ICS system.

Microcomputers in Human Service Agencies: A Survey of Utilisation Trends and Training Agencies

Jerry Finn

This study reports the results of survey of microcomputer utilisation by 300 human service agencies in the Triad region of North Carolina. The survey represents 84% of the agencies which utilise microcomputers. (It should be noted that 48.4% of agencies not presently utilising computers reported that they planned to purchase one within the next 3 to 5 years.)

The survey included information about the length of microcomputer use, the functions for which it is used, which staff utilise the system, the type of data kept in the system, confidentiality and security measures used to protect sensitive data, present and anticipated staff training, direct uses of the microcomputer, considerations in choosing not to computerise (for those indicating that they do not have a microcomputer), and problems/concerns regarding the agencies use of microcomputers. In addition the survey focused on the microcomputer information and training needs as perceived by the agencies themselves.

The results indicate that microcomputers continue to be used primarily for word processing and financial management. However, there is increasing use of microcomputers for direct service functions. For example, 29.5 % of agencies report that direct service workers utilise a microcomputer. In addition, 62.6% of agencies indicate that client records are kept with microcomputers and 28.1% are using their systems to network with other agencies in providing case management.

The use of microcomputers for direct service functions and networking raises concern about maintenance of confidentiality and ethical use of information. This concern appears well founded. Of agencies maintaining client records, only 19.4% used password protection for entering the system

and only 8.1% utilised code numbers instead of client names in their record keeping. More importantly, only 3.2% (2 agencies) reported that the agency had set up an Ethics Committee to monitor and evaluate the ethical use of client information.

Agencies listed a number of problems and concerns with regard to the use of microcomputers. These included hardware breakdowns, lack of appropriate software, lack of funds to upgrade the system and pay for additional programming, concerns about confidentiality, and inadequate training for staff. Several agencies reported that there was increased dependence on a few staff who understood and operated their systems, and that it was extremely disruptive when these personnel left the agency.

The results of this survey indicate increasing use of microcomputers by human service agencies and greater involvement of direct service staff and functions than previously reported. Implications for human service agencies and social work educators are discussed.

Computer Utilisation in Direct Practice

Daniel J. Finnegan, Andre Ivanoff

Direct service practitioners face increasing demands to become familiar with computers. Unfortunately, direct practitioners are frequently involved only in procedural adherence to management information systems and know little about more general computer applications to direct practice.

This study examines whether a minimal training intervention using word processing software affects graduate direct practice social work students' use and attitudes toward computers. Two classes under the same instructor (N=39 and N=19) were used. Members of one group received brief didactic and hands-on computer training during the semester. A written questionnaire was administered to both groups pre- and post-training and again at 6-months follow-up. Additionally, students in the training group were required to complete a paper using word processing. Papers from both groups were rated for clarity and quality of writing.

Preliminary analyses indicate beliefs by both groups that computers will have greater influence and more value for improving interpersonal and interagency communications, e.g. case recording, correspondence, information and referral, than for tasks typically associated with clinical practice activities, e.g., assessment, treatment planning, intervention. Higher use was found among those in the computer training group at post-test and follow-up. Although the attitudes of training group students became somewhat more positive, findings suggest that the attitudes of neither group changed significantly from pre- to post-test.

Artificial Intelligence - an Aid in Child Protective Services Caseload Control Systems

John D. Fluke, Gregory N. O'Beirne

Between 1976 and 1985 reports of child abuse and neglect have increased by 188% in the United States while resources to combat the problem have grown much more slowly. It is

anticipated that artificial intelligence (AI) and particularly expert systems will continue to be of interest to help manage these limited resources more effectively.

Risk-assessment techniques used to assist protective service workers in making casework decisions are among the AI applications which are considered promising. An important issue apart from the application of AI approaches is that few risk-assessment instruments have been validated on other than an experimental basis, nor has reliability been determined. Furthermore, the effectiveness of risk-assessment with respect to controlling caseloads or improving actual service delivery has not been demonstrated. While the use of AI to assist with risk-assessment decisions is technically feasible, the knowledge base presently available to construct appropriate decision-making criteria may be inadequate.

Attempts to build child protective services risk-assessment instrumentation into expert system applications will be discussed. Available research results from a study of protective services intake decisions funded by the US Government and being conducted jointly by the American Bar Association and the American Association for Protecting Children in multiple jurisdictions will be presented. New expert systems approaches involving the use of AI front end processors to access conventional information systems will be demonstrated. The demonstration will focus on techniques for using expert systems in administrative control of caseloads.

The presenters hope to raise the following questions for discussion:

1. Can the limited understanding of "risk" be applied appropriately to casework productivity?
2. How can AI applications be evaluated and incorporated into the goals of caseload control?
3. Can expert systems designed for risk-assessment at the case level be used in connection with expert systems for caseload control decisions?

The Role of the Integrated Workstation in Developing Social Information Resource Services

Donald J. Forgie, Donald F. Bellamy, Simon Mielniczuk

Each author presents one paper. The first paper deals with the theoretical/conceptual framework of information networks and computer communications technology for human services; the second deals with the human service environment, present and future; the third deals with the practical and operational concerns of application.

FORGIE identifies the importance of communication theories, technological discoveries, and assumptions in designing and developing information services. The role of computer communications technology, the development of open system information networks and their relationship to networks of

integrated workstations are discussed. The impacts of these and other human discoveries on the social environment and human perception are explored. The understanding of the technologies and related assumptions when engaged in the design and development of human service information applications is of underlying importance. The paper provides some insight into essential elements required for successful development of network nodes using integrated computer communication capabilities and underlines the importance of the persons responsible for managing information technology applications.

BELLAMY presents the inevitable tension between environmental forces and the needs of individuals, universities, governments and other institutions in the light of the potential impacts of communicating systems explored by Forgie. Foremost is the continuing interplay between centralising and decentralising forces in an international context where geographic boundaries have dissolved in certain contexts and where political boundaries take on new meanings. The paper describes the social service environment of the 1980s and the transactions that appear to be taking place. The role of research into the effects of technological interventions in human services is described and discussed.

MIELNICZUK describes the practical and operational concerns and opportunities associated with the management of research and development of integrated workstations generally, and specifically that of the Advanced Communicating Lab at the University of Toronto. He describes components of the Social Information Resource Centre project of research and development at the Faculty of Social Work, University of Toronto and reports test results.

New Technology and Information Exchange in Social Services

Jan Forrest, Sandra Williams

There is evidence of an increasing awareness of and demand for automated office systems in social services departments. Enormous advances in computing and telecommunications have presented information technology as an attractive option for handling departmental and authority-wide communications. It is uncertain, however, how far these advances can benefit the sharp-end workers in social services.

This paper examines three related issues which will affect the extent to which information technology is central to proposals for improving the exchange of practice and development information.

Firstly, it considers whether the technology, and in particular electronic mail and videotex, has the potential to facilitate information exchange. Secondly, it focuses on the cultural specifics of social services which have inhibited widespread acceptance of that potential. Thirdly, it looks at the wider context of the local authority and the opportunities and constraints which corporate policy may imply for social service departments seeking to invest in technology.

We do not offer a prescriptive model for the appropriate use of new technology in social services. We do set out a series of

challenges for all those responsible for ensuring that investment in technology is relevant to the day-to-day tasks of practitioners. In that sense perhaps the most important challenge is to social workers themselves - the challenge to get involved.

Integrated Informations Systems for Social Work Practice in Child and Family Service Setting

Don Fuchs

Computerisation is having a dramatic effect on child welfare organisations. Increasingly, these organisations are undergoing dramatic organisational changes as they adopt computer technology for information processing. Hasenfield and Mutschler (1986) suggest there are two reasons for this: firstly, in a milieu of scarcity and retrenchment, there are greater demands on these agencies for accountability and demonstrated efficiency. These demands require that agencies generate a great deal of information about their operation and that they document the quality and quantity of services they provide as well as as how accessible their resources are. Secondly, the rapid development of low-cost computer-based management information systems presents an opportunity to agency administrators to use such a technology to cope with the increasing informational demands faced by the agency.

However, of even greater concern this paper will argue, is that the political sensitivity and the sensationalism of child abuse cases has put increasing pressure on child caring agencies for accurate and immediately accessible information relating to the services provided to children in care or at risk of abuse in their own homes.

In all child welfare agencies a close relationship exists between direct practice and administrative decisions. The core of activities in child welfare agencies are directly related to clients, the clinical data system is essential to any other administrative information system. This requires that an information system should support decisions regarding case management, treatment planning, monitoring and evaluation. However, most child welfare agencies adopt computer technology primarily to support administrative decisions for financial accountability and payment for the purchase of resources such as foster care, homemaker services, or residential care services.

The purpose of the paper is threefold: firstly, the paper examines the need for linking administrative and clinical information systems within child welfare agencies. It identifies the problems created when these systems are not linked. Secondly, the paper presents a framework for the development of an integrated information system for child welfare agencies. Finally, it identifies some of the issues in implementing this type of information system within the two Canadian provinces (i.e. the provinces of Ontario and Manitoba). In Canada the responsibility for jurisdiction on child welfare matters is provincial. The author will discuss the current state of child welfare information systems and their planned direction for development in the light of the integrated model put forward in the paper.

The Impact of Computer Technology on Social Welfare Organisation: Substantive or Symbolic?

John M. Gandy

This paper reports the findings of a study of 8 Canadian social welfare organisations that assessed the impact of computer technology on social welfare organisations through an analysis of the internal and external environment of a sample of organisations at various stages of computerisation. The organisations selected included a local public social services department, two child and family treatment centres, a neighbourhood community centre, a treatment centre for the physically handicapped, a treatment centre for adolescents, an information and referral service for immigrants, and a district office of the National Parole Service. Data was collected through questionnaires administered to staff (374) at all levels, interviews with staff and board members, participant observation and reviews of relevant organisational records.

The level of utilisation of computer technology in the sample of social welfare organisations is analysed using the conceptual framework developed by Hasenfeld to assess the implementation of change in organisations. This framework includes adaptive, technological, authoritative and pattern maintaining elements.

Our findings indicate that many, if not most, of the anticipated positive and negative consequences, for staff and the organisation, of computerisation have not materialised. However, the use by, and perceptions of, staff toward computer technology varied by position, with managers and administrators the most consistent users, and across organisations. There was less variation than anticipated, based on the literature, by age, sex, education or professional identification.

Computerisation did not pose a serious challenge to the established power structure in the organisations nor did it impact, in a significant way, on the traditional relationship between direct service staff and clients.

The potential contribution of computer technology in social welfare organisations remains largely unrealised. The reasons for this lie in the organisational response and the perceived and actual use of computer output. The minimal demands made on the organisation from external sources and the lack of organisational pressure on staff have resulted in the use of this technology that is largely symbolic.

Cross-cultural Health Care: Bridging the Gap with FileMan 17.07

Marcia L. Garcia, Susana M. Canett

This presentation will discuss the role of FileMan 17.07, a database management system and its impact on the cross-cultural training of health care providers.

The academic training of health care providers in the United States, particularly allopathic and nursing fields, has led to the

wide disparity in the effective health care delivery of culturally different populations.

According to several studies, including direct professional experience as former director of medical school admissions, the disparity can be attributed to several factors. Among those are: 1) health profession institutions failing to recognise the steady, but rapid growth of minority populations, the significant differences in the health care needs of culturally different patients, and the high mortality and morbidity rate facing minority groups. 2) The number of under-represented minorities in the health professions is extremely limited, e.g. blacks, hispanics, native Americans, and most recently Southeast Asians. 3) The resistance of health professions institutions to adopt cross-cultural training in their curriculum in spite of 1 and 2 above. Even though the field of nursing first introduced transcultural education, only a limited number of nursing institutions have implemented it.

The Cross-cultural Health Care Program (CCHCP) was developed in response to the need to sensitize health care providers to cultural differences in patient care. CCHCP enhances providers' clinical diagnosis and the effectiveness of treatment compliance.

FileMan 17.07, a database management application running under UCD Micro-MUMPS, is used in the CCHCP demographical information component, on research studies, and as a data management.

FileMan was developed by the Veterans Administration Hospital and was written in the MUMPS Standard Programming Language. FileMan has played four important roles in CCHCP:

1. Tracking System
2. Data Collector
3. Report Generator
4. Academic Tool

Information technology has been instrumental to the success of provider education. FileMan 17.07 is vital to CCHCP as an instructional tool and as a database management system.

Using Expert Systems Technology to Assist in Family Therapy Intervention Design

Wallace J. Gingerich, Steve de Shazer, Hannah Goodman

This paper describes the authors' experience in developing and testing BRIEFER, an expert system which advises the brief family therapist on the type of intervention to give the client. The authors will begin by describing what expert systems technology is and how it has been used in the human services. The steps in developing an expert system will be discussed and illustrated based upon the authors' experience with BRIEFER. (BRIEFER is a demonstration prototype expert system programmed in LISP on a microcomputer.) Next, the actual operation of BRIEFER will be demonstrated using a videotape of a family therapy interview. The usefulness of BRIEFER will be discussed, including its impact on theory construction and interviewing techniques in brief family therapy. Finally, the authors will discuss the type of human

service problems which lend themselves to expert systems technology, and the resources in time and expertise that are required to develop a competent expert system.

The capacity of expert systems technology to process symbolic data (i.e., words rather than numbers) is making it possible to apply widely available computing resources to a broad range of knowledge processing problems in the human services. The applications are potentially very great, and may lead to significant improvements in the quality and cost effectiveness of services.

Computers in Dutch Social Services

Hein de Graaf

Will social services and information technology ever meet? What is the actual use of computers in the Dutch social services? What will the future bring in this respect? What recommendations are there for the (future) users of computers in social services?

These are the main issues of research done by the author in 1985/1986 in the Netherlands. The paper is a summary of the results, the analysis and the recommendations

Some of the **results** of the research are:

- Almost everybody has problems during and after the buying of computers;
- The only advisor in most cases is the one who delivers the goods, hardly an unbiased advisor!
- Some 50% of the social service agencies have one or more computers. Almost all of them are used for administrative purposes (word processing, financial administration, client records);
- The possibilities of the use of computers in the actual work with clients are unknown to most social service agencies.

An **analysis** was made of the 'compatibility' of social services and the 'computer world'. This analysis was built upon the ideas of Walter LaMendola about the consequences of the confrontation between different values and norms of both 'worlds'. He compares the situation of the social services with some of the characteristics of the third world. It turns out that his view also applies to the Dutch situation. One of the main problems is the difficulty (perhaps impossibility) of defining key-words used in social services in such a way that they are acceptable in computer programs.

The **recommendations** focus on the fact that before you decide to buy computers you must learn to know your organisation. However, a lot of social service agencies do not even see themselves as an 'organisation'.

There will also be some practical advice about how to buy computers.

Integrating Management Information: Program Evaluation and Practice Decision Making at Boysville of Michigan

Anthony J. Grasso, Irwin Epstein

As yet, the social work literature has not offered a description of a fully integrated, management information, program evaluation and practice-decision-making system that is operational in a social service agency. This paper describes such a system at Boysville of Michigan, the largest residential child care and family treatment agency in the state. Starting with the underlying assumptions that went into the design of the system, the paper goes on to describe its technological elements (e.g., hardware, software, forms, etc.), the process through which it was developed, and patterns of staff utilisation of system-generated information at all levels of the organisation.

Constructing Computing Systems for Schools of Social Work: Responding to Unique Human Services Needs within University Computing Environments

Robert G. Green

A computing system for a school or department of social work within a college or university must be responsive to the varying human and technological needs of at least four diverse user groups. First, many schools need computing systems which are responsive to the differential curriculum requirements of students pursuing the BSW, MSW and PhD degrees. In addition, the hardware and software requirements for faculty are no less heterogeneous than those required by these different student groups. Indeed, a truly responsive computing system for social work must feature an appropriate amount of simplicity and "user friendliness" to recruit and encourage computer application among non-users, while meeting the more sophisticated needs of "computer wise" social work groups.

Support staff and administrators constitute a third group of users. Although some social work support staff have been trained in word processing and methods of information technology, others continue to cling to their typewriters and notepads. Similarly, computing attitudes and skills of social work administrators are particularly variable. Finally, because of continuing education services and because many agencies continue to purchase c.p.u. time from colleges and universities, social agency personnel constitute a fourth group of users of social work computing systems.

The presentation describes a recently developed computing system constructed to be responsive to the needs of each of the user groups identified above and compatible with the resources of the greater university. It includes a physical description of the computing system: a group of internally networked microcomputers (Macintoshes) linked to one another, to laser printers and to the resources of a university-

wide Local Area Network of Unix driven Pyramid minicomputers providing such utilities as electronic mail, writers workbench, etc; direct access (via the Macintosh units) to an IBM mainframe which runs traditional data analysis packages (SAS, SPSSx, etc) and administrative programs; and direct access to all of these facilities from home work stations through the use of University configured and distributed communications packages (Kermit). In addition, the presentation addresses the management of pertinent intra university organisational variables which may impede or facilitate the implementation of human service computing systems within university environments.

Microcomputers in Clinical Social Work

Leo de Groot, James M. Gripton,
Paul S. Licker

This paper describes the outcome of a three year research and demonstration project on microcomputer applications to clinical social work practice. The project, the Digital Social Worker, was conducted in the Family Therapy Programme, Alberta Children's Hospital, Calgary, Canada and was funded by the National Welfare Grants.

The paper locates the project in the history and current context of microcomputer applications to clinical social work and counselling practice by other professions, describes the development of an integrated software package to support clinical social work and its application to family therapy, and discusses general administrative and user-computer interface issues and how they were addressed in developing and installing the system. The sections of the paper are as follows:

1. History and current status of microcomputer applications to clinical social work practice in the United States and Canada: a brief overview.
2. The rationale for the Digital Social Worker project.
3. The social agency as a computerisation environment.
4. Decision-making in clinical practice.
5. Developing a clinical data base.
6. A consulting system approach to a decision support system.
7. Clinical practice and computer expertise.
8. Strategies for hardware and software purchase.
9. Administrative and human relations issues in computerising a clinical social work service.

Videodisc Applications to Human Services Training

Eugene E. Grossman, Donald E. Maypole

The College of Education and Human Service Professions at the University of Minnesota, Duluth, is three years into a technology transfer project designed to evaluate the instructional benefits of using interactive learning technologies

to enrich the education and training of human service professionals. Approximately \$1.8 million from private corporations and foundations has been committed to the project to date. The **technology development goal** of the project is to develop a series of 21 stand-alone interactive videodisc instructional programs to be used as enrichment units in the core curriculum for human services education and as a training media for the in-service training of practising human services professionals. Each videodisc instructional program merges the information storage, graphics, text and processing capabilities of computers with the broadcast quality video and audio capabilities of videodisc technology. Approximately seven hours of instruction is presented through each program in a format where the learner is in complete control of the pacing, selection and branching of the program through simple touch-screen commands.

The instructional programs feature pre- and post-knowledge tests, optional instructional tracks for different preferred learning styles and different level learners, realistic problem-solving simulations where learner decisions alter the situations and feedback received, opportunities to interview content experts, and access to multiple video still and motion examples of the content being treated. Sample instructional programs on group processes, cultural diversity, descriptive statistics, and counselling procedures will be demonstrated.

The **instructional development goals** of the project are to:

1. Establish a network of university and practitioner resources who will collaborate in the topic selection, instructional design, and evaluation of the instructional programs;
2. Produce instructional programs specifically designed to improve the helping skills and competencies of human service professionals;
3. Improve the instructional competencies of human services faculty members through conducting all project front-end, design, production and evaluation activities in house, and;
4. Establish a functional network of physical and human resources through which improved practitioner education may be delivered with advanced learning technologies.

The project has been successful in accomplishing each of these instructional development goals at a regional level. The processes used to attain these goals and specific data supporting each will be presented.

The **research goals** of the project are to evaluate the effectiveness of interactive videodisc instruction in human services education and to determine the extent to which interactive learning technologies are currently being employed in human services educational settings.

Current research efforts of the project include:

1. An experiment assessing content achievements and learner satisfaction with learners randomly assigned to interactive videodisc instructional programs or linear lecture delivery of the same materials;
2. A quasi-experiment assessing content achievements and learner satisfaction when learners are provided interactive

videodisc instruction in their preferred learning style or in a non-preferred style;

3. A survey of 90 graduate school deans to determine the state of videodisc applications in schools of social work; and

4. A learner satisfaction survey of social work students at UMD after one class exposure to a videodisc on descriptive statistics.

Findings will be reported.

A Planning and Control Computer Model for Human Service Organisations

Hugh D. Grove, Joyce E. Frakes

This paper develops a planning and control computer model that can be used by a human service organisation of any size, although the model is primarily directed toward the first time micro-computer user. The following managerial accounting principles are developed as the foundation of the computer model: budgeting, revenue and cost behaviour, and separable revenues and costs by programme. A simple example of a human service organisation, a state mental health centre, is used to develop the model. Basic computer model applications are illustrated for budgeting, cost control, and cutback or retrenchment analysis. The managerial behavioural issues of motivation to develop and then to use such a computer model are raised. The relevant applications of the computer model in this paper, demonstrated in a "hands-on" training session, should help motivate human service managers to become more sophisticated users of computer models and help alleviate the educational and operational roots or causes of computer anxiety.

The Impact of Computer Application in the Human Services - an Economist's View

Fritz Gruendger

The welfare sector ranks as the one public sector where the contradiction between needs and means finds its most flagrant expression. Hardly another sector reacts so sensitively to economic changes, which are reflected by the kind and volume of the services demanded, with only a small time-lag followed by the adaptations of the budget to the changed economic situation.

The majority of the human services staff view the economic side of their jobs with scepticism if not dislike. It is the task of the economist next door to help articulate their doubts as questions and try to answer them. This paper deals with two questions which managers and employees in the other industries share with those in the human services:

- 1 Do computers help to save money?
- 2 Do computers jeopardise jobs?

But even when combining both questions, the thereby emerging efficiency-by-redundancy issue does not cover all aspects of the profession's unease. A more differentiated view will have to split up the problem into three parts, i.e. ask for the effects of computer use in the human services in terms of service quality - service quantity - service costs.

At present nobody will expect a clearcut 100% probability, but as far as can be seen by now, certain trends and tendencies already begin to show, which may give some hints for guidance. The sources of such a trend-analysis for the human services in general and for social work in particular are of fourfold origin:

- experiences already gathered in the human services;
- arguments by analogy from experiences already gathered in service branches related to the human services or working with similar methods;
- extrapolation of visible trends and regularities;
- speculations or fictitious scenarios, based on understanding the logic of the interaction between clients, agents and institutions of the human services area.

The answers cannot be generally given for the total of the human services, but will be different for different modes of activity: information, counselling, education and training, treatment, nursing, office work and administration.

A Strategic Information Service in Community Development

Kevin A. Harris

From an information services viewpoint, most kinds of non-scientific and non-financial organisation are characterised by the low status of information as a commodity. As a result, information units tend to be under-capitalised, and particularly in the human services area this is typically the case. Information workers in this sector are often on their own and isolated from other services: using traditional manual systems it may be impossible to provide an effective system which satisfies a varied range of needs - including current awareness, 'alert' services tailored for individuals, and comprehensive retrospective retrieval. The inefficiency results from the fact that this range of needs usually calls for documents to be handled more than once.

This paper outlines an application, at the London-based Community Projects Foundation (CPF), which involves the use of a microcomputer with Inmagic database software to provide such a range of services from a reduced level of document handling. Items can be recorded once only while the information they contain can contribute to any service established. Current literature relevant to community development workers is abstracted at the keyboard, generating a resource known as 'CDbase'. Inmagic's flexibility in providing output formats allows the preparation of various services - current awareness bulletins, SDI, specific searches etc. - depending upon the amount of detail required, by printing or screening out individual fields. The database is enhanced

by online searching facilities and the Headform reformatting software by which retrieved records are re-formed to match the CDbase format.

Information in the field of community development is characterised by the broad range of sources, the lack of structure of the literature, and the low awareness, among users, of the volume of information available. The CPF Information Service is designed to take account of these characteristics and also to adapt to the increasing maturity and coherence of the body of literature in the field. Future developments planned include the provision of access to external users from remote sites, and the introduction of end-user searching at CPF sites around the UK.

CDbase is an example of an application which overcomes limitations on resources to offer an enhanced, user-oriented information service to assist those involved in community work at all levels.

Collecting Accurate Information about Child Abuse

Jean K. Harrod

Child abuse/neglect case data, as submitted to an automated MIS, was studied. The purpose was to examine whether the information, which is the basis for administrative decisions and most current theory in the field, is reliable. Children's Protective Services (CPS) supervisors and administrators were also questioned about their attitudes, experience, and opinions regarding automated systems and statistical reporting. Error rates from respective units were compared to see if supervisory differences influence the accuracy of their group's output.

300 casefiles were read which were, or had been, active with Children's Protective Services in Wayne County, Michigan. The last central registry document submitted was examined. The information reported (and recorded in the central registry) was compared to the information which should have been submitted, based on other written records.

Specific fields and different types of information were found to have distinctly varied levels of accuracy. Type of case (denied/open/closed; court/noncourt; abuse/neglect/both) also influenced accuracy. An overall average error rate of 19.6% was present. Half of the items scored, including information often used for programme evaluation and casework decisions, were found to have error rates exceeding 20%. Type and direction of error is discussed.

All supervisors (20) and section heads (5) in the county filled out a questionnaire probing general background, self-reports of personality, attitudes towards paperwork, MIS staff, data submission requirements, and specific supervisory practices. Significant differences were found between supervisory and administrative units, but theories from other user populations were not supported.

A least squares regression found five supervisory areas which accounted for 60% of the difference found: (a)

self-perceptions as more logical than intuitive and (b) more willing to take risks than peers, (c) belief that the MIS information may be used against them in the future, (d) self-reports that they checked the accuracy of the MIS form 100% of the time with routine case-readings and (e) have done some computer or information system design or training.

Personal Computers in the Field of Social Administration: The PROSOZ-Project

Dr. Haesenritter

The PROSOZ-Project deals with the implementation of a personal computer aided system for the application of the West-German social welfare act in four local government units (Bremen, Dreieich, Herten, Untermosel) and in one county (Mayen-Koblenz).

The project participants do not intend to implement an isolated change in data processing. They develop an integrated concept, to improve the quality of human work. This includes issues like organisation, qualification, participation, client orientation of social administration, working conditions, hardware and software ergonomics, economic efficiency.

The main targets of this project are:

- Improvement of working conditions
- Client orientation
- Economic efficiency.

The project is sponsored by the West German Ministry for Scientific Research and Technology (Project Fund: Humanisation of Work). Several universities and colleges are engaged as advisers in the processes of organisation development and software development.

The project team at the Institute for Public Administration in Hagen developed a software-prototype, called Prosoz, to aid the application of the German social welfare act. In a process of rapid prototyping this system is being adapted to the needs and requirements of end users in the local government units by the Hagen project team.

The software supports several important aspects of an officer's tasks in social administration:

- collection of personal data on clients
- examination of the legal instructions in a dialogue
- examination and calculation of requirements and income
- word processing: printing of filled applications forms, decisions, documents, etc.
- A help system supports the enduser, when he wants to get special information about legal instructions, jurisdiction, operating instructions, and so on.

Special emphasis is put on software ergonomics problems:

- Learning time, to operate the system, is about one day.

- The program is self explaining.
- An ongoing task analysis was an important precondition for a system, which is adapted to the main functions of an officer and to the typical flow of work.
- The program is tolerant with regard to most operating faults.
- The system offers a maximum of choices, to direct the dialogue, depending on the user's level of experience with the system and on the special task to be done.

A Study of Computer Utilisation in Social Work Settings: Pursuing a Collaborative Agenda between the Field and the Academy.

**Nancy R. Hooyman, Paula S. Nurlus,
Anne E. Nicoll**

The rapidly evolving information technology of computers is changing the face of social work practice and roles. These changes, in turn, present schools of social work with the challenge of reviewing their curricula with respect to computer technology and applications.

The School of Social Work at the University of Washington has undertaken a planning and data-gathering approach toward the goal of achieving an effective interface between classroom and practice preparation with computer applications in the field. As part of this process, a survey was mailed to human service agencies (N=183) that serve as current practice training sites and potential employers for masters level social work students in the Seattle metropolitan area. The survey addressed two major purposes:

1. To inform faculty about current and projected computer utilisation for both direct and indirect practice functions within representative human service agencies in the Seattle area.
2. To obtain an agency perspective regarding the needs, opportunities and obstacles involved in computer utilisation in several service activities as well as the emerging training priorities for the School and the practice setting.

Based upon findings from this survey, this paper addresses the following: current and projected computer utilisation for direct and indirect practice activities within these agencies; agency attitudes toward the importance of computer training; types of computer training currently provided to agency staff; and agency expectations about the computer proficiency of new staff. Given the perceived issues, benefits and emerging training needs regarding responsible and effective use of the computer, the paper concludes with implications of these findings for curriculum planning, for practice development, and for a reconceptualisation of "computer literacy."

A Medical Model Approach to Utilising Information Technology in a Multi-disciplinary Setting.

**Carolyn S. Hughes, Robin L. Hansen,
Gary G. Hughes, Gordon L. Ulrey**

The Child Development Programme of the University of California, Davis, Medical Centre needed to grow from a

limited clinical experience to a complex service delivery system. This system envelopes other academic institutions, practising professionals and students from a variety of cognates and systems, tertiary agencies in a 23 county region of Northern California, and clients/patients and their families. Staff includes professionals in medicine and other cognates with: multidisciplinary training; skills with an emphasis on information technology applications; database design experience; or strong statistical/research backgrounds utilising computer technology.

Over 30 databases were designed at the outset to aid in administrative tasks such as billing and client tracking systems, and to provide matrices of clinical observations, diagnostic outcomes, developmental milestones, and other clinical applications. Some of these initial database designs have become the frameworks for research projects evaluating the developmental progress of high risk neonates over time; projecting developmental outcomes for infants and children at risk; and comparing the reliability of various assessment tools.

A major step to interact and integrate with other state and local agencies was to begin a networking process. A series of multidisciplinary working conferences are being sponsored to design and implement a collaborative community model for the local region. Out of these conferences will come a uniform vocabulary, data collection terminology and formats, and innovative concepts to effectively share client data while maintaining client confidentiality and right to privacy. The merits of such a system are being discussed in terms of a more beneficial and comprehensive use of community resources.

The potential and expectations of this project are for staff to fully appreciate the need for computer accessibility to patient records; train staff to respect both the scope and limitations of the technology; be aware of the positive potentials for research; and to be sensitive to this technology's powers and pitfalls.

Networks

Steve Ice

This workshop is geared for those interested in establishing new nodes within the Computer Use and Social Service Network. It will provide an overview of networks considered both syntactically, as a set of nodes and routes and pragmatically, as a means to social service information transfer.

Networking advantages will be reviewed: transfer time, multiple participation, output format and tag avoidance. The purpose for message, text and software transfer will be overviewed with comment: roundtables, public relations, resources, special interest group exchange, data transfer, software acquisition and news. Node specialisation and CUSS resources will be explored with a description of current nodes, shareware and the relation of CUSS to IFNA and other networks. Historical remarks will be included.

Minimum node configuration and setup will be described along with the operating system, applications software and telecommunications equipment. Nodes will be introduced as

staging areas for Network activity including comments on software features, areas and commands.

Actual operation and management of net/nodes will then be explained. Use and generation of nodelists, archive handling, dialing and cost control, modem and file transfer protocols, emulation, dropping to external programs, and sample daily batch files. Routing will be taken up extensively: scheduling and event types, hosting, traffic control, route file attributes, polling, file request and other special situations. The full range of net utilities will be introduced: mailer shells, echos and echo topology, robot mail, message handling clones, reading, numbering, addressing and message listing.

The scope of node management will be outlined. Examples of marketing will touch on: group presentations, on line help and help lines, showcasing software, methods of increasing participation and the importance of board identity user conventions and goals. Obtaining copyright permission, text, software and other means of assisting marketing will be brought up.

Local and remote system maintenance will be reviewed: registration, security, management reporting, purging, review of messages, mail and backup. Methods of reducing system failures will be included. Overall time commitments, case history and long term automation will end the technical discussion.

Comments on the role and benefit of networks will complete the presentation. Networks exemplify the basic strata of human communication. They are encyclopedic and idiosyncratic, allowing the development of norms through inter-personal exchange of perspective and encouraging the growth of translations across viewpoints. Modern formal systems have arisen like new suburbs on this ancient strata to codify and discipline evolving interpretations of facts and principles; thereby overcoming the absence of objective criteria in primitive networking. We owe much of our advancement to these formal systems. Yet, even with quantification and modality, formal systems have difficulty when abductive inferences need to be made in light of some anomaly, i.e. the assessment was correct, the right intervention was applied, and the client's situation got worse.

We are reminded of the idealised nature of formal systems and the need to maintain contact with the intersubjective networks with underpin them. As decision systems become more used, they will increase rather than decrease the need for electronic networking among social service professionals.

Lab Experimentation in Computer Policy Models in the Human Services.

Salvatore Imbrogno

Policy analytical models have been developed and used in the human services with increasing frequency as a means to structure policy problems, forecast alternatives, goals and objectives, monitor policy outcomes and to evaluate the impact a policy has on a client group or community. It is now propitious with the advent of advancements in social policy theory and methodology to elevate the level of inquiry to include computer simulation technology. The use of this

technology is imperative in the face of highly complex policy systems, the "over-abundance" of information and the increasing practicality of computers.

It is the purpose of this paper to incorporate computer simulation methodology into the epistemological foundations and methodological directives of mainstream policy analytical models. Simulation of policy has qualitative and quantitative elements necessary for conducting laboratory experiments on a computer which is defined as a symbolic representation and conceptual design for a real-world policy system whose behaviour is being represented over extended periods of time. This is a critical variation for the human services in that laboratory experimentations become substitutes for field work experientials. Computer simulation policy models confront the ambiguities, indeterminacy and uncertainties of complex policy systems without direct involvement of a client group or community. Computer laboratory experimentations make dynamic use of time, possess the capability of synthesising social theories, can integrate different policy system designs and select and process information from a variety of sources representing a multiplicity of values, interest and belief systems. A computer simulation policy model is a comprehensive and unified conception of the policymaking process.

This paper delineates the relationship between mainstream policy analytical models and the emerging methodology of computer simulation in the human services. A primary task is to present a description of mainstream informational components and analytical methods to policymaking as a prerequisite to the understanding of computer simulation models. The human factor is preserved through an analysis of the role and function of the professional in the organisational context of the policy system. Though emphasis is placed on the generalised designs of computers, a description of building-block designs is offered as an alternative value to the human services. Highly developed system tools and methods are classified for application to computer simulation of policy. Finally, a procedure for computer simulation of policy models provides an exploratory model for applications in the human services.

Computerised Social Services: The Effect as well as the Cause of Social Change

Norbert Janetzke

The following abstract deals with a project in the Federal Republic of Germany - a project concerning among other things the use of information and communication technology in the field of social work (social security office).

First of all this project is a reaction to the enormous increasing rate of cases (social security clients) in the social security office which means a worsening of working conditions (strain, hours of overtime, and a rise of routine matters). This has a negative effect on the clients (restriction of legally demanded advice and personal help). Partly there are obvious points of contact to the rationalisation conceptions in the administrations.

Already now it becomes apparent that the complexity of problems in this project and the different participants (specialists, typists, management, scientists, promoters, decentralised and centralised technic-designers) make a project supervision and a systematic exchange of information more difficult.

This project is developing a PC program called PROSOZ (Programmed Social Help) that aims to speed up the process of special work (supplementary benefit), to reduce routine matters considerably, to improve the quality of social work, and as a result to intensify the supply of advice for the clients.

Decisions of technical implications in the sector of social work are of serious consequence and can only be taken by viewing the problems in their entirety. The answer of the question: 'computer, yes or no?' can't be given in general. This must be considered in detail and it depends on the specific sector of social work, its actual problems and the supply of technical design.

The participants are being qualified, amongst other things, for this task with the help of scientists. The essential task of qualification is a comprehensive professional training, which will theoretically prepare the specialists for an extensive development of organisation in the social security office, where the technical aspects can only be a part.

It is the task of research to get to the bottom of those fundamental processes, which lead to the implementation of computer systems, as well as to investigate the processes following the implementations.

Computers, Social Service Administrators and the Question of Training

John F. Jones, Kcon Wah Tsol

A general problem, accentuated in the Third World, is the application of computer technology to social service administration and planning. Even where hardware and software are available, the administrator may not always know how to use them and to what purpose. To a large extent, the solution to this problem may be sought in training. The paper presents a case study of training Hong Kong middle management social service personnel in the use of computers for programme evaluation, survey research and other aspects of administration. It sets out to document and evaluate the computer-related training undertaken by postgraduate students at the Chinese University of Hong Kong. The students are social workers employed by the public Social Welfare Department and the voluntary service agencies, and are mainly, though not entirely, drawn from middle management or equivalent positions. The programme itself is geared to training social workers in social planning and administration. The presentation covers three features of computer training; (1) computer skills in research and planning; (2) hardware, software and technical support; (3) computer usage in general administration.

An evaluation of the total programme reveals that the first two categories show considerable strength while the third is weak. The reasons for this are explored. The principle explanation for the strength in computer-related skills in research and planning seems to be the prior skill of instructors and students in research methodology as well as their statistical sophistication. These combined with appropriate hardware, statistical packages such as SPSS, and technical support make the mechanical aspects of research and planning relatively easy. More troublesome initially has been the acquisition of skills relating to computer searches of databases. The training is most wanting in helping students acquire the everyday skills of computer usage, e.g., spreadsheet computing and electronic data filing. The reason seems to lie in the haphazard, uncoordinated mini-courses and casual instruction offered students, despite the existence of excellent microcomputer laboratory facilities and skilled support staff. The deficiency points up the need to integrate ordinary computer skills in administration courses rather than provide a parallel series of short-term sessions on general computing. Drawing on the Hong Kong experience, some tentative generalisations are made on computer training for social service administrators. Attention is focused on social service agencies in developing countries where computer hardware, software and skill may be in short supply. Strategies to fill this gap are suggested.

Human Service Applications

Nils-P. Karlson

NORSK DATA A.S. is a major European computer company. We design, develop, manufacture, sell and service a compatible line of microcomputers in the ND-110 and ND-500 (superminicomputers) series, all having virtual memory features.

Norsk Data is a major supplier to Norwegian public administration, including social services, hospitals, etc. in central and local government.

Being a large supplier to public administration, Norsk Data has supplied systems to several Human Services. Our strategy in this field is to support the end-user as well as their clients by making systems that are easy to use yet powerful and effective, and designing systems that offer the clients better service and less waiting in lines. Co-operation with end-users has produced very useful tools for reducing time-consuming tasks, and we now have several solutions in the Human Service field. All of these are thoroughly tested and in daily use.

All solutions are integrated with our office support systems giving a unique possibility to share software and hardware resources, enhance organisational communication and improve service.

A List of Currently Available Systems

Software used in Human Services are partly developed by ourselves and partly by independent software houses. The following is a list of systems available, and running:

NOMIS, Norwegian Medical Information system, used by hospitals;

SOSIS/OSKAR, Social Security Information Systems, used by local governments in the processing of applications for aid and benefits;

NORTRYGD, a system made for the Norwegian State's Department of Social Security. This agency has branches in all local government areas in Norway, 454 in all, and the NORTRYGD system is installed in approximately 160 of these, covering about 50% of the population;

NORNE, an employee health monitoring system for companies;

Systems for local governments including the administration of local health and welfare services.

The systems are being steadily improved with new releases and new features. Together with these more specific systems, we offer a general system for the monitoring of cases, applications, etc. through the different levels of local government until a decision is made.

Experience with our Systems

Although domestically gained, end-users experience with our systems should have international relevance, e.g.:

- Increased attention to the security of personal information stored electronically, and consequently, development of means to ensure this security;
- Automation of routine tasks enabling e.g. social workers to devote their time to working with people rather than doing paper-work;
- Extensive possibilities of getting statistics made to order as and when required;
- Strongly emphasising the need for organisational development in order to obtain improved service to the public and a successful implementation of computer technology as a means of supporting humanity, both within and external to the organisation.
- Emphasising the fact that computers are means, not goals, in an organisation.

Developing the Intelligent Consultant Trainer Program

Andrew S. Kerslake

The early computer initiatives in social work appear to have centred either on programs which facilitate the management of social work agencies or those which are for direct use by clients. There is now an increasing interest in how new technology can be used both to meet the information needs of social workers and to aid their education.

Such programs have considerable potential. They can be a route for offering social workers information so that it is more likely to be used than traditional information sources, e.g. books and articles. They are easy to update and so are

particularly relevant for legislation and agency procedures. They can be available for use 24 hours a day and are not subject to the vagaries of human memory and distraction.

There are also pitfalls and problems. Programs have to be user friendly if they are to reach an audience which has little intrinsic interest in the technology. They have to be 'intelligent' if they are to be able to replicate the complexity of human problems which social workers are confronted with. We also have to carefully consider when and how they should be used if we are to avoid the same phenomenon of the 'video crazy' era when every section of social work education seemed capable of being captured on video.

This paper, based on the experience of developing such packages at Bath University, will explore these questions and some of their potential solutions.

The Humane Use of Information Technology in the Social Services

Keith M. Kilty, Chet Dilday

There are two groups of people who are most affected by the emerging use of information technology in the social services: clients and agency staff. While the technology may have benefits for both groups, it can also be potentially harmful and oppressive to them. The major factor which will determine how contemporary information technology will affect the lives of client and staff members is the purpose for which computers are brought into a particular organisational setting: to enhance individual welfare or to produce efficiency and control.

According to Gordon (1965, p.32), "An essential attribute of a democratic society is the realisation of the full potential of each individual and the assumption of his social responsibility through active participation in society." Presumably, the social services exist to help people achieve their full potential, not only clients but also staff. While this may be a noble idea, the question is how information technology can help us to achieve it. In fact, is this ideal even considered when decisions are made to bring computer and information systems into particular agencies?

Information Technology and Clients

There are several ways in which computer systems can be of help to clients, most of which are indirect: (a) information systems may enhance the ability of an agency to raise money, by improving the ability of the agency to provide immediate reports and to demonstrate accountability to funders, and (b) information systems may be of substantial value for the planning process (e.g., use of census data and other secondary data sources for needs assessment purposes, especially for special populations). There are also some ways in which computer systems may have a direct effect, in terms of improving the effectiveness of service delivery, including improving diagnosis and intervention, providing client information more quickly to counsellors and making decision support systems available to counsellors.

There are several ways in which information systems are potentially harmful for clients. First, confidentiality of

information is a critical issue, since there may be broad access to information through modems and storage media (e.g., disks). Many agencies maintain extensive records on sensitive matters, such as adoption information. Second, once a case is electronically filed, there is a tendency for it to become just another number, to become anonymous to the organisation. As a result, there may be more concern with late payment than with how a client is doing. Finally, clients lose control over what is being done to them. Since data can be moved around without client awareness, clients lose their self-determination in what is being done to them and who has access to the information that is kept on them. This could lead to an increase in alienation among clients.

Information Technology and Staff

There are a number of ways in which information technology may be beneficial to direct service staff, including (a) giving them timely and accurate reports about their productivity; (b) supposedly freeing them from excessive paper-work; (c) providing information about clients very quickly and easily, leading them to look for trends and to become involved in practice-focused research; and (d) giving rapid feedback on test results.

Computer systems may also be beneficial to support staff in several ways, such as (a) freeing them from the tedium and the routine of repetitive tasks; (b) simplifying record-keeping tasks; and (c) providing tools for them to do their jobs more efficiently (e.g., word processing, billing, filing).

While computer systems may have some benefits, their use in agency settings also carries the risk of harm for staff in a number of significant ways. First is the issue of control over work. Computers allow managers to know exactly how much and when staff do what. This is probably the major issue: do computer systems really help staff to do their jobs more easily and efficiently? Second, using information systems can make work more dull and boring - ultimately, more alienating. It can devalue the quality of the individual's labour by simplifying it. Third, computers can actually increase the amount of work to be done, especially if old records need to be added to the databases. Finally, there may be physical problems to contend with, including eye-strain and back problems.

Alerts: A Use of Computers that Enables More Direct Patient Care

Michael A. King

Health care professionals are mandated to meet many time frame requirements. This includes actions that must be taken, renewed or updated with predetermined frequency. The consequence of not complying with these requirements can often have financial impact (cancelled reimbursement to the hospital). In addition to these requirements good practice techniques suggest certain time frames for patient care activities and interventions. These are quality issues that improve the help provided or eliminate delays in the patient getting the medical care. The computer is an ideal tool to help staff meet those needs, thus meeting regulatory and financial timetables but also helping patients through this process. A computerised alert system has been developed, part of a

larger information system, which accomplished this. The user initially enters the title of the specific alert needed. The next step is choosing one of the data fields in the patient record. There are 16 possibilities to choose from, such as the date of the admission, date of case opening, date the level of care was completed, date home health services were requested, etc. The final step is to indicate the frequency of updating or review needed, in number of days. Then, with the entry of the initial data that the activity was started, the program will use this data to determine when the next activity on it is needed. Daily printouts are then effected for each alert established, listing patients needing that kind of activity and when it is due by. It provides advance warning of this need so as to avoid the last minute rush that often occurs when these things are tracked on a manual basis. For instance, one such alert could give an advanced warning that certain level of care forms will need to be updated within 3 days. Another, due to a requirement that patient chart notes be written on a weekly basis, would print a list of patients who need a progress note (based on the date the case was opened). In the hectic atmosphere of the hospital this system relieves the staff of having to either remember, set up and review a special tickler file, or find some other means of tracking these items. It enables them to free up both their time and their energies that can be better used for direct patient care. This paper will describe this system both from a program and user point of view.

Microcomputer Assistance in the Remediation of Dysphasic Language

Claire Kinsey

There has been a great deal of speculation regarding the role of microcomputers in the re-training of dysphasic patients. Enthusiasm should be tempered with caution; each application in this new and exciting area must be clearly defined if it is to have an impact in the future. This study is one of a series and compares the performance of stroke, dysphasic patients on selected speech therapy tasks administered both in the conventional way and by using a microcomputer.

As it has been hypothesised that the treatment of dysphasia requires consistent systematic stimulation of the patient and is generally more effective if intervention is frequent, the computer may well provide an excellent medium through which to administer supplementary therapy. Its ability to perform repetitive tasks with endless patience, together with its facility for the provision of immediate and dynamic feedback indicate that it may suit the aphasic patient extremely well. A specially written, menu-driven program will be demonstrated, exemplifying the method of administration and performance recordings compiled. Additionally, results of the study to date will be informally discussed, together with the future implications of the research.

Computer Training for Social Work in the Federal Republic

Berndt Kirchlechner

Historical background and the situation today

In the past it has been mainly Social Scientists at Colleges and Polytechnics who have used computers in their empirical

research. As a rule they made use of the mainframes in College computer centres. Word processing, calculation programmes, data banks and graphical programmes have been used by several departments since 1982, when the first personal computers were introduced.

Some ten Social Work Departments are known to be teaching their students how to use computers, and/or are using them in seminars for such tasks as empirical social research, or test psychology. A growing number of students also use computers in preparation for their diplomas, for statistical analysis, evaluation of research or as word processors to produce their work.

A number of teachers at Polytechnics make use of computers in research projects, preparation of material for publication or for teaching. Personal computers are also used where college teachers carry out administrative functions, such as accounting or media archives. The use of personal computers as terminals for on-line research in literature and material data banks will grow in importance in the future.

Department equipment - hard and software

Not all Social Work Departments are adequately equipped with personal computers and appropriate programs which would give teachers and students the chance to use computers. Many departments are now attempting to procure equipment, but financial constraints are such that only a few items can usually be purchased.

Computers and College Instruction

As long as schools fail to teach basic computer theory it will be necessary for colleges to begin by introducing their students to this new form of cultural technology. Firstly, so that students can use the equipment in their own work - "studying with the computer" - and secondly, because an increasing number of institutions, both public and private, are introducing computer-supported systems, which social workers need to understand and be able to evaluate critically.

In the public sector it has become evident that there is little value in concentrating all EDP work into computer centres, which are too ponderous for many tasks. Decentralised, usually coupled systems are being tried out in several places.

Considering job opportunities for students in the future, it would be irresponsible not to give them the opportunity to learn the elementary stages in this area. These basic qualifications can then be used for specialisation at a later stage in social work in its stricter sense.

Curricular Considerations

Important elements in a computer course for students are knowledge of the structure and components of a computer system, and the explanation of their functions, but above all practical training with different systems and the introduction to user programs.

Active and interested students should also have the chance to broaden their knowledge, including the introduction to computer languages. It is also important that the practical training with computers confronts students with the results of new technologies, for employees and others, as well as the consequences of computer use in such fields as Ergonomics and Data Protection.

Developing an Information Technology Centre with Few Resources

Brian W. Klepinger

As human service agencies in recent years have moved rapidly to incorporate information technology and the benefits of computerisation into their agency operations, so have graduate and professional schools also desired - or have been pushed - to incorporate such developments into their curriculums. However, the incorporation of new courses on information technology, and especially the acquisition of hardware, software and staff to support such course work is an expensive undertaking. This is especially true at a time when resources to support these efforts are continually shrinking. Few departments or schools of human services today are fortunate enough to secure sufficient funds from their host institutions to purchase the necessary hardware, software and staff support to initiate an in-house computer laboratory. Other equally serious hurdles must also be overcome, such as faculty and staff attitudes toward the use of computers in human services, which may range from indifference to outright hostility.

One such school in the United States - the Denver School of Social Work of the University of Denver - faced this very situation four years ago. Yet today, this school is generally seen as a leader in the United States in the quality and diversity of its activities in information technology applications to social work practice. How this school moved from having no in-house computers, no courses on computers, no expertise in the use of computers, and few budgetary resources to its current leadership role in information technology, is the focus of this paper. Presented in the form of a case history, the paper traces the step-by-step progression of the Information Technology Centre which today includes: a variety of courses; a computer laboratory; an integrated local area network (LAN); the US National Software Exchange for Human Services; and a number of other related activities and services.

In addition to tracing the steps in the process, the author, one of the three individuals involved in initiating this effort, summarises the lessons learned from the process and presents practical suggestions to other institutions on how they too might develop such computerised information technology centres in spite of limited resources.

Computerisation of Human Service Agencies: A Funder's Viewpoint

Brian W. Klepinger

Following other sectors in our society, health and human service agencies have moved rapidly in recent years toward computerisation of their operations. However, most such agencies seldom have sufficient budgets to underwrite the costs of computerisation. This has led public governmental agencies to seek supplemental appropriations from their respective funding authorities, and private voluntary agencies to submit grant requests for computer support to foundations

or corporations. However, just as health and human service agencies have become sophisticated in the application of information technology to their delivery of services, so have funding bodies become more sophisticated in their review and evaluation of funding requests to support this development.

This paper focuses on an analysis of requests for funding various kinds of computer applications in health and human services, and differentiates between those requests which were funded and those which were not. The author, a senior executive in one of the larger private grant-making foundations in the United States, describes the kind of computer-related grant proposals received by his foundation over a recent 12-month period; discusses the differing characteristics of these proposals selected for funding versus those which were rejected; shares some of the concerns funding bodies have today with regard to computer-related funding requests; and ends with a list of "do's" and "don'ts" for health and human service agencies preparing funding requests to support information technology applications in their agencies.

Although this paper represents the experience of a private foundation in dealing with computer-related grant proposals in the United States, the analysis of the strengths and shortcomings of the funding requests and the list of tips to those preparing such requests should be relevant for requests to all types of funding bodies as well as to different countries.

Priorities, Allocations and Tracking System

**Marilynn Knott, Stephen A. Hobbs,
John David Clymer**

In 1984, the Oklahoma Department of Human Services (ODHS) initiated an outcome-orientated management by objectives system of administration named Priorities, Allocations and Tracking System (PATS). ODHS is one of the largest human services umbrella agencies in the United States, encompassing 28 major programme areas and the Oklahoma Teaching Hospitals complex with a fiscal 1987 budget of over one billion dollars. One of the imperatives for operating such a system has been the monitoring of objectives and action steps through some type of automated record structure. At first, plan progress was maintained on one personal computer using limited-capacity software, with each division required to send quarterly reports via floppy disks or hardcopy for transfer onto the database. The shortcomings of such a system were painfully evident and a new system was designed utilising the Department's mainframe computer.

In January, 1987, an on-line, mainframe-supported tracking system for the planning process was implemented. The system was programmed in FOCUS and supported through TSO on the host computer, linked with an existing on-line correspondence monitor, the Automated Assignment Tracking System, which connects each major office and division with the Director. Due dates identified in the planning process appear as due dates of assignments on the deadline monitoring system as well as in the PATS.

The PATS is designed to allow each office or division to oversee its own plan progress, making task assignments,

updates, and refinements as necessary. The Department has established mission and goal statements upon which each subsection bases its objectives and actions. In addition, the Director of the agency and the Commission of Human Services, the governing body of ODHS, establish five-year priorities each year which must be addressed in the planning process for the following fiscal year. The intent is to gain the most complete staff participation while maintaining administrative direction where needed.

The development of both the planning process and the automated support system was a team effort among a social work administrator, a social work planner, and a management information programmer, with each person contributing expertise and direction throughout the project. The presentation consists of a description of the evolution of the current planning system, the problems and pitfalls involved in implementing such a system, the implications of using a central mainframe-supported system, and a summary of future additions and planning modifications. Technical assistance on the use of FOCUS and TSO in such a system will be available.

Implementing an Information System in a Human Services Organisation: Integrating People, Procedures and Equipment

Nancy M. Koroloff

Adapting to changes in the way information is handled is a unique challenge for most employees of the human services organisation. Many organisations are just beginning to understand how they can use microcomputer technology to support agency work (beyond word processing). Other settings, influenced by advances in technology, are ready to improve an operating system by upgrading the software or hardware used. The changes may seem minor to technical staff but they may appear overwhelming to support of clinical staff who feel they have just mastered the most recent conversion. This presentation will describe the work that needs to be completed before a new or modified information system, is brought up to operational status in the human services organisation.

The process of implementing a new or improved information system within an organisation needs to be approached with the same care and planning as the design of the system. A number of changes need to occur within the organisation to accommodate the new or modified system. These changes focus on integrating the people, procedures and equipment that support the system. It may involve activities like writing new job descriptions, instituting new ways of handling and checking data, and installing new equipment and supplies. Other major activities may include acceptance testing, converting existing data files to a new format, and monitoring the initial performance of the system.

Timing is a critical success factor during implementation. Administrators are typically eager to justify the staff and fiscal resources that have been expended by getting the new system up and running as soon as possible. Staff, too, may be eager to access a technology that promises to reduce their workload.

If the new or improved system is brought up before the preparatory work is completed, many days may be spent in *rebuilding an accurate database or overcoming negative staff attitudes*. The decisions related to implementation fall into two categories. The first, *technical decisions*, includes concerns regarding conversion, procedures and system documentation that must be acted upon before the system is ready to run. The second, *organisational decisions*, refers to actions regarding people, their work and its relation to the new system. Lack of attention to the people who must run the information system and use the reports may result in a failed or poorly running system.

To implement any innovation successfully, people need a sense of purpose and clear division of labour, responsibility and authority. With careful planning the integration of people, procedures and equipment can be achieved in such a way that allows the full potential of the technology to be used with a minimum of discomfort to the people involved in the change.

Implementing Information Systems for Services to Homeless Populations

Larry W. Kreuger, John L. Stretch,
Alice K. Johnson

Microcomputer based information systems of two programs for the homeless provide data for management issues involving both the delivery of services to the homeless populations and accountability mechanisms available to service providers. First, efforts to coordinate the delivery of services to homeless and near homeless individuals seeking assistance and shelter resulted in the St Louis Homeless Reception Centre database system. Second, the Health Care for the Homeless Coalition of Greater St Louis developed an automated management information system to record demographic data on homeless clients and to track health and related services rendered.

Experiences from these programs indicate that traditional (non-automated) service delivery models and accountability protocols undergo significant modifications as automated capabilities exceed management expectations. For example, data indicate not only gaps in existing services for persons already homeless, but serious questions arise about the adequacy of both federal and local provisions for low income residents who are on the threshold of homelessness.

The planning and administration of programmes for homeless populations which are administered via new technologies raises issues which reflect larger policy questions among public and private service providers.

Database Design For A Client Information Management System

Walter LaMendola, Charles J. Mastrini

This presentation will provide a comprehensive overview of the required planning steps to implement and design a computer based client information management system. Emphasis will be placed on highlighting the various design considerations

required in developing a model for automating a client information management system. This model will utilise a system design approach to produce a modular informational system. The primary design considerations are for a small agencies or programme with an active client base in the 1000+ range. This system will utilise DBASE programming language, and is intended to run on Personal Computers.

Information will also be provided on how to network this database system with currently available shareware software. A working prototype will be demonstrated at this conference.

Objective

To provide participants with information regarding the steps necessary to design and implement a client information management system. In addition, information will be provided regarding the utilisation of electronic telecommunications to link agency locations.

A demonstration of the software will be conducted, illustrating how a client database operates and its capabilities to manage client information. Each participant will be provided with a copy of the software programs.

Specific tasks that Database-Management System must perform:

- Add client information to database
- Sort client records into a meaningful order
- Search for sets of data by type or range
- Display data in any report format desired
- Allow changes to update database
- Check for duplication in database
- Handle client accounting system
- Create client billing statements
- Generate reports of therapists' statistics

Characteristics:

- Adaptable to low cost computer networking
- Adaptable to various agency settings
- Ability to be modified by non-technical people
- User friendly -- requires a minimum of computer literacy
- Menu driven system
- Modular software components
- Low investment in terms of hardware, software, and technical support services
- System security

This material is intended to be presented in a lecture format with visual presentation of software.

Flowcharting within a Community Social Work Team - Using the Apple Macintosh

Duncan Langford

This paper describes the evolution and development of procedural flow-charts within a child care field social work team, explaining the particular use of an Apple Macintosh computer.

Beginning with a brief summary of the considerable potential

advantages for "grass-roots" social work practice in the use of effective flow-charts, it discusses ways of identifying appropriate tasks to be charted. This is followed by an examination of the criteria for productive chart use, while the advantages of involving potential users throughout the process is stressed.

Following task identification, the paper describes various methods of flow-chart design and development, explaining why the Macintosh computer is particularly suited for this work. Examples of charts developed are introduced, and the paper continues with descriptions of flow-chart introduction and implementation.

Positive and negative effects of the introduction of "individual" flow-charts within a social work setting are then examined, particular attention being given to problems likely to arise during implementation.

Finally, a summary of what has been achieved within on local child care fieldwork team is presented, with indications of the direction of future development.

Microcomputers in Therapy - Applications in Occupational Therapy

Shena M. Latto

Recent years have seen an increasing interest among British occupational therapists in the applications of the new technology to their work with patients. This interest has extended beyond a concern to incorporate computer skills in work preparation or retraining to an exploration of the uses of microcomputers - or, more accurately, of different input devices and software - in the treatment of a variety of physical and mental conditions. Therapists have been limited by their own lack of knowledge and expertise and by the lack of hard and software designed for specific therapeutic purposes. However, while these problems still exist, it is fair to say that far more is known now than in, say, 1980 about the treatment applications for microcomputers and associated hard and software. There is a growing stock of knowledge and expertise within the profession and of equipment and programs being developed by or, more usually in conjunction with occupational therapists.

In general, exploration of the therapeutic uses of microcomputers has been fairly opportunistic, ad hoc and unevaluated although there are a few instances of more structured approaches. The material in this paper is largely drawn from a descriptive research study linked to a government initiative of the mid 1980's whereby a number of microcomputers were given to selected Occupational Therapy Departments with the intention of stimulating interest in and exploring their potential as a treatment tool. These microcomputers have been used by therapists in the assessment and treatment of people with mental and physical handicaps and with a range of psychiatric and physical conditions including neurological damage and illness, spinal, limb and hand injuries, burns, rheumatism and arthritis. They have been used with children and adults of all ages, including

geriatric patients, and on an individual and group basis. Inter alia, they have been used in treatments intended to improve or develop motivation, concentration, memory, perceptual skills, conceptual thinking, cognitive function and skill, reactions and reaction time, hand-eye and other co-ordination, scanning ability, hand and limb function, balance, sitting and standing tolerance, communication and interaction, morale, confidence and social skills. Given the lack of a systematic evaluation, it is not possible to make categorical statements about the effectiveness of microcomputers together with their associated peripherals and software, as therapeutic tools. However, therapists who have used them report that they consider them to be a useful addition to the occupational therapist's repertoire and are able to identify areas in which they think the computer to be a useful tool. A number of clear themes, most of which apply to work with both physical and mental handicap or illness, emerge here.

CRISSP - A Social Service Micro Package

Mark Law

CRISSP is a micro modular computer package designed to run on a variety of equipment across many local authorities. It has been developed in two stages, addressing home care and child care in the first instances.

- a) The production of a functional specification, defining and meeting the requirements of nineteen authorities.
- b) The development and implementation of a technical specification derived from the functional specification.

There are 128 local authorities in England, Scotland and Wales carrying responsibility for Social Services functions. The nineteen subscribing to CRISSP represent a substantial proportion (1/6th) of the total. The authorities are diverse in their size, structure, organisation and patterns of response to demand.

The process involved in (a) above include the use of a steering group to define an outline specification, the use of prototyping in a 4 GL as a communications exercise and development aid, a balance between collaboration and committee development on the part of the users, and an assessment of the latest portable multi-user 4 GL database systems. There are interesting implications for system design in all the preceding.

The Steering Group responsible for CRISSP was able to draw on a good deal of experience of existing comprehensive or specific applications in social services. By and large these have been information systems producing either individual or aggregate data for a variety of purposes. Other systems relate to financial functions, e.g. payment of wages, accounts, etc., and budgetary control. So far there has been little evidence of systems providing direct benefits to front line workers, service organisers, or the clerical staff who support them.

CRISSP takes the view that:

- a) Computer applications should be justifiable in cost/benefit terms;

- b) There should be practical benefits for front line and support staff who process the data;
- c) The 'state of the art' is not very far advanced, and there must be room for both flexibility of use and for further development;
- d) A wide range of equipment configurations and hardware strategies must be catered for.

One of the problems CRISP has faced has been through its funding process. Cash for the production of the functional specification was put up by participating authorities, who were then asked to continue to subscribe to the development and implementation of the system. Given the time scale (one year for the functional specification) and the limited funding, the specification has tended to meet the highest common level of user requirements. The potential for taking on board advanced concepts and techniques that will provide practice based benefits for field workers, has been limited by the need to first communicate and then sell these concepts across a very wide customer base.

There is, of course, ample scope to address these and other areas in the future.

Confidentiality in the Human Services

David Macarov

Achieving greater effectiveness and efficiency in the human services through use of computer technology requires recognition of the possibilities and problems inherent in such a move. Among the unresolved and sometimes unresearched problems are those of resistance; shifting power relations; monitoring; changes in recording and practice; client participation; dehumanisation; the technological imperative; and physical side-effects. Perhaps the most widespread and influential factor, however, has to do with confidentiality. This paper examines the history and definition of confidentiality, and some current problems arising from the concept; and the need for new definitions and understanding in the light of societal changes and the application of computer technology.

Developing a Computerised Case Management and Data Retrieval System for a Rehabilitation Agency

Glen J. Macdonald

Computer technology offers human service agencies tremendous opportunities to improve their efficiency and effectiveness. Appropriately designed systems can truly assist organisations to achieve their service goals. Most human service agencies are amenable to computerised approach to data collection, service delivery and programme management issues.

A computerised Case Management and Data Retrieval (CMDR) system has been developed by the Manitoba Division of the Canadian Paraplegic Association. The system is comprised of

several components. These include the data storage and retrieval system and a case management feature. Written rehabilitation plans are used in conjunction with the system and comprise an integral part of it.

The data storage and retrieval component contains identifying information about clients and is used to document the type of clients served, as well as the number and kinds of services delivered. Information can be extracted for planning, monitoring and evaluating programmes. The case management feature assists counsellors to organise and manage their caseloads in a systematic, rational and efficient manner.

A Tandy 1200 Hard Disk computer and a DBASE III program is employed. Services are categorised into ten major groups, each with additional sub-groups, to indicate the particular type of service provided. Clients are assigned a 'service status' according to the level of activity anticipated and the individual's service needs. Service reviews are completed at specified times for clients on the active caseload. Workers receive caseload printouts on a regular basis.

When the CMDR system is incorporated with written rehabilitation plans, the result is a comprehensive system which promotes a coherent approach to casework and caseload management. Program planning and evaluation and staff supervision is likewise enhanced by using various elements of the system. The computer is also used for other office and organisational functions. Benefits and limitations are discussed as well as potential future applications.

The Electronic Aristotle: Computer-Assisted Instruction in Human Services

Robert J. MacFadden

Early writers envisaged computer-assisted instruction (CAI) as heralding a revolutionary new era where the computer would function like an electronic Aristotle, infinitely patient and dedicated to meeting each learner's needs. While these glorious promises have not yet been realised, considerable advances have been made.

This article describes CAI in the context of training in human services. A definition of CAI is offered, accompanied by several related terms including computer-assisted learning (CAL), computer-managed instruction (CMI) and computer-based training (CBT).

The presentation notes that in North America much of the development, writing and research in CAI has occurred within traditional educational settings and that utilising CAI with adults in training contexts in human services has been underdeveloped. Some limitations of CAI are explored including the extensive time commitment and financial resources that are frequently required for development. Examples of CAI applications in industry and human services are offered.

A program created by the author, graduate social work students and content specialist to instruct new child protection workers in child sexual abuse assessment is highlighted. Using this program as an example, the process of courseware

development is described as a balance and integration of at least three major technologies: educational, computer and substantive or professional.

The child sexual abuse training program is based, in parts, on Sgroi's approach (1984) and presents material on protocols, investigation, validation, child protection and a bibliography. A tutorial strategy was selected where several frames of information are presented followed by questions on this content. The modular design allows the learner to enter or exit the program at several different points and to proceed at an individualised pace. The critical nature of ensuring high quality content is emphasised noting that a program may be technically sound but contain weak or irrelevant content. This is particularly important in human services where trainers may vary widely on content relevance. If available, choosing a well-accepted model ensures more credibility and engenders less resistance.

Related issues in courseware development are explored including instructional objectives and strategies, hardware and software considerations and integration within existing training systems. The effectiveness of CAI is discussed and the presentation concludes with a challenge to human service professionals to develop expertise in this area and contribute to the creation of relevant and effective CAI systems in human services.

Resistance To Computerisation: A Study of Power Conflicts

Steven F. Mandell

The introduction of computer technology into the social service environment has been fraught with difficulty. The literature has identified that while there are many applications that have been successfully implemented, there are many others that have met resistance. It appears that in spite of the philosophical support for change, utilisation of promising technology in the human services is very often obstructed. As such, the diffusion of computer technology has been scattered and uneven in the human service arena. This exploratory study examines the relationship of resistance to computerisation and power conflicts within a social service agency. That is, what is the perceived effect on the structure of power when a social service agency automates its information processing and how does it relate to resistance?

The study was conducted in Maryland at the Anne Arundel County Department of Social Services. The sample population, 64% of whom held MSWs, provided positive responses to the use of computers in social work, demonstrating an appreciation of the technology and its value in service delivery. However, a substantial portion of the population expressed resistance to computerisation, suggesting that computers were dehumanising, not reliable, and a threat to the delivery of quality service. The results further suggest that although the respondents do not view the computer as a threat to their personal power to control their casework, they believed that computerisation gave the organisation greater power to control their general activities. The workers indicated that with computerisation there was a

greater centralisation of power and that the organisation had greater control over their work. In addition, they indicated that they believed that some decisions about their professional performance are based on computerised records, but that computerised records do not provide an accurate reflection of their performance or worth.

The study suggests that areas of resistance may reside within an "adopting unit" during the diffusion process, even though the general attitude towards computerisation may be highly positive. It should be noted that the results indicate that this resistance is maintained when differentiated for educational level, suggesting that even the most scholarly members of an organisation may resist an innovation that they "intellectually" recognise as an aid to their profession. It is recommended that further research be conducted, with particular reference made to the concept of power as a predictor of resistance to the adoption of computer technology. In conclusion, it is suggested that a more thorough understanding of this relationship will enhance the ability of social service agencies to implement new systems in the future.

Excelsior's Udata System

Tom McKinlay

Based on seven years of research, experiment and theory, Excelsior Youth Centres, Inc. in Denver has now focused two years of effort on developing and implementing a system of Unified Diagnostic and Treatment Awareness, (UDATA).

Further development continues in building this sensitive, powerful, thoughtful and down-to-earth tool for advancing the efficiency and effectiveness of residential diagnosis and treatment.

The basic advance is not so much one of diagnostic or treatment modalities, and certainly not one of computer hardware, it is rather an advance of clarity, insight and communication. In bringing isolated aspects of clinical awareness together, the broad and precise, the intuitive and empirical, this unified awareness yields more effective diagnosis and treatment. It is a unified awareness not only of diagnostic indicators of all kinds, but of treatment options and suggestions.

It is an expert system, the genesis of an artificial intelligence, supporting the higher functioning of therapist, milieu and client. The system enhances the import of clinical history, diagnosis, treatment and prognosis.

The complexities of theory, system design and computer programming have been dealt with extensively to insure that the end user will experience speed, clarity and ease of use.

With the UDATA system, a broad yet precise diagnostic impression is clarified daily, weekly and monthly upon a high resolution format of sensibly organised indices. The full depth and breadth of a client's psychosocial condition is represented from both a detailed and global perspective, a sort of 'psychosocial weather report'. Standardised indices for intuitive assessment throughout the system are: the relative

parameters of Psychosocial Conditions and Psychosocial Adjustment, along with the specific behavioural parameters of Self-concept, Motivation, Problem-solving and Relationships. Significant event coding and empirical indices are quite comprehensive, yet maintain a full efficiency and common sense.

From the complete and integrated view presented by the system, behaviour patterns clearly emerge and suggest specific targeting of treatment work where it can most effectively resolve, for example, entire negative syndromes. Intrinsic dysfunctions become more apparent and more accessible to direct treatment focus. Supporting both insight and behavioural approaches, the diagnostic and treatment modalities incorporated in the system are of a sound eclectic and classic treatment base. Individual treatment strategies initially arise from paradigm case formulations.

The specific objective of the UDATA system is to yield vastly more accurate and useful diagnostic information so that our knowledge of clients, as well as our intuition, will be more accurate.

The Impact Of Computerisation on the Reporting and Investigation of Child Abuse and Neglect

C. Aaron McNeece, James R. Jolley

In 1979 the Florida Department of Health and Rehabilitative Services (DHRS) began planning the development of a computerised system for reporting and tracking abuse and neglect cases. Prior to 1983 all suspected cases of child abuse and neglect were reported to local intake workers. Beginning in 1983, reports could be made either to local officials or through a toll-free telephone number to a centralised abuse registry in the state capital. Both local reports and reports to the central registry were tracked via a new computer system. Florida law required that each allegation of abuse or neglect be investigated by DHRS within twenty-four hours. Reports that were not substantiated were expunged from the agency's files. Information from investigations which resulted in a finding of abuse or neglect were transferred to and maintained on the agency's computer system.

The centralised reporting system operates on a 24-hour-per-day, 7-day-per-week basis. Incoming calls on the WATS line are directed through a computerised phone system to the next available worker. A summary of the report is input directly to the computer system, and reports which meet the state's definition of abuse or neglect are transmitted immediately to the nearest intake worker for investigation. The intake worker should have access to all previous substantiated allegations of abuse or neglect before investigating the case.

This research focused on the impact of a computerised, centralised reporting system on the length of time required to investigate abuse and neglect cases, and the effect of the new system on case dispositions. Data from 1982 through 1986 reveal not only an improvement in the investigation time, but also an increased capacity for handling a much larger volume of cases.

Also examined were structural and organisational factors within the eleven district offices of DHRS, differences between the processing of locally-reported and centrally-reported cases, referral sources, types of alleged abuse, number of previously substantiated reports, and client characteristics such as race, sex and age.

Effects of Child Support Collections on the Economic Well-Being of Families with Dependent Children

John S. McPeck, Philip E. Klein

Significant scholarly work has been devoted to the determinants of a welfare family's receiving a payment of child support and the amount of such payments. Much of the work was done using a small sample, and much of that examined characteristics of the support obligor as explanatory variables. Rather little has been done about longer-term matters such as how long payments continue and how reliably, and the total amount of money finally sent to the families.

The United States' Deficit Reduction Act of 1984 (DefRA) required Child Support Enforcement and Aid to Families with Dependent Children (AFDC) administrations to forward up to \$50 per month of payments of current child support obligations to the AFDC families. Previously the State retained the whole amount. The systems and programming developments needed for the forwarding made it possible to aggregate payment information to a case-by-month basis and match these data against the AFDC records for the appropriate month. Thus for any month of interest, investigations can be carried out on what sorts of families are more likely to receive a payment, and what sorts receive larger payments. Case-by-month payment information for up to 2 years can be concatenated to produce a longitudinal case-record that can then be matched with the most recent AFDC information.

Preliminary results of the first attempts indicate that there are noteworthy differences in propensity to receive a payment according to each of at least these variables: gender of the welfare case head, number of caretakers in the family, race of the case head, region of the State, number of persons in the household, age of case head, number of children for whom support might be payable, and marital status and education level and earnings of the case head. Not all these variables made a difference in the one-month total payment amount, however: number of persons in the household, education level and earnings made no important difference. Variables affecting the length of time an AFDC family receives payments while continuing on Aid were slightly fewer: gender, race, marital status and earnings of the case head, number of caretakers in the household, and number of children for whom support might be payable.

These same variables drive the total amount of money forwarded to the families over the period of payments. Only the gender and race of the case head influence the regularity of payment. It seems, for instance, that male case heads are less likely to get a payment, that they receive a smaller total payment, receive one for fewer months while on Aid, receive less total pass-through money, but receive payments slightly more regularly than female-headed cases.

In general, however, it appears that once payments are begun, they are seldom omitted until they stop altogether, and that once they do begin, they are seldom less than the \$50 pass-through amount.

The conclusion we draw is that it is now possible to investigate connections between certain child support matters and welfare reciprocity in a different and conclusive way. Our presentation's aim will be to share particular findings such as those above, and provoke discussion and further investigation

An Urgent Need: Equal Access to Computers among the Poor

Diane S. Metzendorf

The Information Era is upon us. The major development of this era is the influence of the computer. The problem of computer inequity and computer illiteracy among the poor needs to be addressed as a relevant issue confronting our society today. The concept of computer literacy defines a new type of illiteracy and the potential for new and distressing divisions in our society (Frank Lautenberg, US Senator). The most outstanding implication of the new information technology is that it is utilised first by those who can afford it (Klaus Lenk, Educator). While the computer revolution has arrived, segments of our population are being left behind.

Computer inequity appears in our educational institutions. The 12,000 most affluent schools are four times more likely to have personal computers than the 12,000 poorest schools (Quality Education Data, 1983). Predominantly white schools have twice as many computers as do schools whose students come primarily from minorities (John Hopkins, University Study, 1983). Boys are learning about and using computers more in the schools than girls (The Monitor, 1984).

The consequences of computer inequity to poor families are far reaching and will be long lasting. The gap is already widening between the skills needed for jobs in the service industry and the skills of the current unemployed labour force. Each year more middle-class and affluent families buy computers for their homes. The inability of the poor to purchase computers and limited computer access of the poor effects all member of poor families. It is estimated that by 1990, 3 out of every 4 jobs will require computer literacy.

HANDS-ON Community Computer Centre, Inc. is a not-for-profit social service organisation. HANDS-ON Community Computer Centre, Inc. addresses the need for computer equity. The goal of the Centre is to provide residents of an economically oppressed area in Philadelphia with access to computers and computer training. The Centre offers computer activities in computer literacy, basic skills literacy and job skills training. Together, social workers and educators, with the aid of a powerful tool, the computer, work to improve the quality of daily living and promote the human potential of our economically oppressed population in Philadelphia. The objectives of HANDS-ON Community Computer Centre, Inc. are : to provide computer access to economically disadvantaged people; to train economically disadvantaged people in jobs which require computer literacy; to help

economically disadvantaged people gain and maintain employment; to offer to economically oppressed people computer-aided instruction in literacy and job skills training; to contract with neighbourhood human service organisations for their use of the community computer centre; to offer computer literacy training to employees of human service organisations.

The philosophy of the HANDS-ON Community Computer Centre, Inc. is to expose poor people to the computer in a way that they are able to gain success with it. By building on each successful encounter, their return to the Centre to learn more is assured. The power of the computer as a valuable tool in the poor person's daily life to help gain employment and increase employment opportunities will be emphasised. The first stages of implementation of the HANDS-ON Community Computer Centre, Inc. will be discussed as part of the presentation at HUSITA.

Structuring Initial Conversations between Social Work Staff and Software Engineers on Expert Systems

Clive Miller, Elizabeth S. Cordingley

Software engineers and social work staff come from completely different work worlds. Yet if effective computer systems are to be developed the gap between these worlds must be bridged.

This paper describes techniques designed to reduce cross-boundary barriers. It reports their use in structuring initial conversations between social work team leaders and software engineers, considering the usefulness of expert systems in supporting practitioners handling cases of child abuse.

Information Management as Locus of Power In Deinstitutionalisation of the Medically Ill

Robert A. Miller

Factors which led to deinstitutionalisation of the mentally ill in the USA during the 1970's and 1980's are similar to the factors leading quickly to deinstitutionalisation of the medically ill in the 1980's and 1990's.

The Medical Social Work Information System (MedSWIS) is designed to fill the large void in human service information management technology. MedSWIS empowers the human service professions with an easy to use computer program designed to access the type of facts necessary to successfully advocate in the medical setting for staff and services for the medically ill.

Causative factors for deinstitutionalisation of medically ill include: dramatic shifts in government health care financing, demographic factors, medical technology improvements resulting in increased length of life, and changes in society's ethics and values related to the medically ill.

These factors cannot be directly modified by human service professionals. They can, however, be seen as major challenges for the human service professions since our domain is service and advocacy for clients. Failure to respond to these challenges will abrogate our responsibilities to mankind.

Accessing the Computer through the Adaptive Firmware Card

Mark I. Mizuko

The Adaptive Firmware Card is designed to provide transparent access to the Apple IIE and II+ computers for handicapped individuals who cannot use the standard keyboard, or who find a special input arrangement easier, faster or simpler to use than a standard keyboard. It allows handicapped users to run standard software for the Apple IIE and II+ computers through any of 16 input methods. The presentation will demonstrate the basic operation, special options, applications and the procedures for customisation.

The Use of Computers in Selecting, Monitoring, and Predicting Social Work Student Internships

Jacqueline B. Mondros

The workshop will discuss a computer program developed and implemented by Columbia University School of Social Work in New York City to place, monitor and predict successful field internships for social work students. The rationale and goals for the system are dealt with in this abstract; the process and problems in its development, the program's design and capabilities, and finally generalisations that can be drawn from this experience for other social service functions will be discussed more extensively in the workshop.

Field training has always been an integral part of social work education. While an enormous literature exists on supervision, little has been written on the process of placing students in the field and monitoring those experiences. Successful placement, what it means, and what variables predict it, is uncharted territory. Yet the task is left to Field Work Departments that have acted on professional judgement and experience rather than empiricism.

Two factors make the task of placing, monitoring and predicting successful field placement difficult. First, these departments have four constituencies: agencies, students, faculty, and school administration. These constituencies each have different primary interests which sometimes conflict. The field work department becomes the arena for competition and bartering among these interests.

Second, every field work department contends with a vast amount of ever changing information. All kinds of data are kept about students, agencies and their personnel, and faculty.

Therefore, until computerisation, placement of students relied heavily on personal memory, experiences, and judgement; tracking was a nightmare of paper shuffling; and prediction ability was severely limited. Field placement activities were seen as logical problems for computerisation.

It was intended that the computer program could achieve results in four areas: tracking and management of data, selection of agencies for students on the basis of key variables, standardisation of communication to all constituencies, and prediction ability for successful student placements. The system itself will be described in detail.

Developing the program involved several steps. Professional staff distilled what was known and what ought to be known, and determined what and how to quantify a vast amount of qualitative information. The issues and process of student internships had to be translated to a programmer. The system was co-designed by the author who specified what was needed and a programmer who determined what was possible. All department members were trained for appropriate use and data retrieval. "Glitches" were corrected, new usages identified, and files revamped to accommodate them.

Finally, both the process of development and the computer program itself suggest applications for many social service functions, particularly in the area of client assessment and information and referral services. These generalisations will be drawn.

The Intelligent Text-Processor: Information Technology and Human Needs

David P. Neilson, John Pickering

Recent developments in Artificial Intelligence hold the key to more natural and flexible human interfaces for information technology systems. It is now worth exploring the implications of these developments for users with special needs.

At Warwick, work is being done on a text production system for those with impaired keyboard skills. It will allow users to select a variety of text fragments supplementing the letters available from a keyboard. The menu of text fragments will change to reflect the statistical, syntactic and semantic constraints created by what has been typed so far. Using these aspects of text to select an appropriate menu sufficiently quickly will be done using appropriate techniques from Artificial Intelligence work on natural language.

A two level approach will be adopted. Presenting the user with a menu of whole words and phrases will significantly increase the rate of text production. The factors noted above when combined with the currently typed letters, will ensure that the menu offers words that the user is likely to want. However, to maintain full flexibility users will always have the option of creating words from letters or letter groups.

The system will cater for different degrees of motor disability, for any given user it will change to reflect changes in skill level, topic, customisation by the user and other factors.

Our aim is to increase the rate of text production without compromising articulateness ('what can be said'). The target is to assist those whose present production rate is low (typically around 10 words/minute or less). The target population in the first instance is likely to be the physically disabled but in view of the changing age-profile of Western populations, there could be a significant role for such a system in empowerment of the elderly in written communication and organisation.

Rethinking Computer Literacy Regarding Client Assessment Issues, Goals and Illustrations

Paula S. Nurius, Walter W. Hudson

The goals of this presentation will be:

1. To critique the practical viability of prevailing definitions of computer literacy and approaches to computer-assisted client assessment for use in human service agencies,
2. To highlight emerging alternative definitions and approaches to integrating computer technology into practice settings, and
3. To present one example of a computerised client assessment system designed to reflect these goals.

In terms of defining computer literacy, a paradigm that emphasises application - stressing the converging importance of substantive (practice and administrative) in addition to technical proficiency - will be outlined as well as its implications for training.

A second major topic will be the nature of computer-based client assessment tools that presently characterise the field. Shifts towards briefer, more flexible, and more internationally relevant assessment devices, particularly those that take advantage of unique capabilities of the computer will be explored. Related to this discussion will be the underattended connections between computerised assessment and ever-increasing evaluation and accountability demands. An orientation towards service effectiveness models amenable to meeting both micro and macro practice information needs will be introduced.

To illustrate the substantive points raised here, a user-friendly, interactive software package, the Clinical Assessment System (CAS), will be demonstrated. Interested participants will receive demonstration copies and have the opportunity for hands on experience. The CAS contains 18 short form clinical scales, has the capacity to design an unlimited number of multi-item and self-anchored scales tailored to client and setting needs, and can be used to design and administer social history questionnaires. Finally, the capacity of the CAS for cross-sectional and longitudinal evaluation purposes will be demonstrated, followed by discussion regarding generalisation across varied settings and practice modalities.

Telecommunications: The Acquisition of Information to Assist Clients Residing in Remote Locations

William M. O'Connor

As an ombudsman, an official who investigates and resolves citizen complaints regarding local, state and federal government agencies and medical facilities, the need for information is critical to the solution of problems. The management of information is a tool that an ombudsman needs

to master in order to provide assistance to clients and fulfil our mandate. This is especially true in Alaska, the Last Frontier.

Human service practitioners residing in metropolitan areas have a wide range of resources available to them to research client problems and possible treatment alternatives. However, for those practitioners who travel to remote regions of the world, although the need for information is possibly more acute, the availability of access has been heretofore restricted. In the State of Alaska, an area one fifth the size of the United States, where distance between the Canadian border and the Aleutian Islands is as far as from Miami, Florida to San Diego, California, few resources exist outside of the main cities of Anchorage, Fairbanks, and Juneau. Travel to a village may take two days and thousands of dollars in funds that could be used to provide service to other clients. The need for a cost effective and efficient means of obtaining information that is up-to-date becomes apparent to one who spends much time in villages accessible only by snow machine or dog sled.

Within the Office of the Ombudsman, a system has been developed to utilise the main computer in the home office, a small portable computer equipped with a modem to be used in the field, and the availability of commercial earth stations to down and up-link the Aurora satellite in geosynchronous orbit to maintain communications with various on-line information services and electronic bulletin boards to collect information. The system allows for ease in transportability and a rapid method to communicate with the home office, as well as around the world. The cost of acquiring information is relatively modest, compared with transportation costs, and is nearly instantaneous. Specialised training in on-line research techniques and protocols has lowered the cost even further. In addition to specialised information services, such as Dialog, the Source, and CompuServe, other electronic information systems, such as hospitals, universities, and similar institutions can be accessed to acquire expert opinions on a variety of questions.

In remote regions of the world, a human services practitioner must be able to use all the tools that technology can provide in order to ensure that clients, regardless of their location, can be assured quality services to better their lives. In Alaska, client concerns can be quickly and easily researched, at little expense, and the Ombudsman can be assured that the resources used to resolve a complaint provide the most accurate and up-to-date information that is possible to obtain. Life on the Last Frontier does not mean isolation from lifesaving information, but an opportunity to extend the knowledge of Man to even the most remote village resident.

Teaching Social Work Research through Instruction in the Use of Computer Workstations and a Statistical Package

Edwin W. Ockerman

Purposes

1. To describe an effective technique for teaching social work research to undergraduate social work majors which involve their learning how to utilise computer workstations and a statistical package.
2. To describe how learning to use a workstation enhances the ability of a student to perform his/her own research.
3. To describe how achieving proficiency with a statistical package helps maximise learning to apply statistical tests in analysing one's own data.
4. To describe how learning to use a statistical package enhances the ability of a human service professional-to-be to understand, evaluate, and apply results contained in published research.

Hypotheses

1. Upper division undergraduate social work research students can learn how to successfully utilise a video display terminal.
2. Such students can learn how to use a sophisticated statistical package.
3. Such students can appropriately use the results of the statistical tests in order to test original hypotheses and form conclusions based upon a research project performed at their practice agency.

Findings

1. The instructor spent a considerable amount of time working in the computing centre with the students both as a group and as individuals. Based upon numerous opportunities to observe the students operating the computer terminals, the first hypothesis was verified since these senior social work students did learn how to operate the terminals effectively. The individual attention that the faculty member provided undoubtedly facilitated the student's learning these skills because problems could be corrected and questions answered immediately. The students represented a wide range of intellectual skills and mathematical competencies, but each achieved mastery.
2. Frequent observations during one-to-one consultations with students verified the second hypothesis since each student learned to utilise the SAS statistical package. This hypothesis was verified even more fully by examination of the print-outs of the statistical tests the students performed using the SAS statistical package. In every case, the tests and manipulations were correctly administered and interpreted.
3. The conclusions section of the research project confirmed the third hypothesis since each student's papers contained appropriate applications of statistical tests to hypothesis

testing, although different degrees of specificity and analytical skills were shown.

These results were corroborated by the response to a formal questionnaire.

Relevance to the HUSITA 1987 Conference

One of the most important aspects of the impact of the computer upon human services professionals is the training required to allow them to use this technology effectively. Perhaps one place to start is by learning to utilise a computerised statistical package in order to evaluate aspects of their own agency's efforts. The above study describes such an endeavour since each student was involved in a practice experience at a social agency. Such an approach not only teaches the use of the computer, but does so in a way that is meaningful to the social worker since the results of such evaluative research can be applied in ongoing efforts to improve the effectiveness of the agency.

Computer Based Education for Social Workers: Issues and Research Findings

J.P.J. Oliver, P.J. Huxley

Since the passage of the 1983 Mental Health Act and the subsequent examination conducted by CCETSW for social workers seeking approval under that Act, educational institutions and social services departments have been engaged in the task of developing appropriate training courses. Courses based in the north-west have approached this problem, in part, by seeking to develop material which can both teach and test relevant knowledge through the medium of computer assisted learning (CAL) exercises. As part of the development of these materials, research has been undertaken to look into several aspects of the application of CAL and programs have been designed, developed, tested and marketed. These can serve as institution or distance based tools for structured learning or revision as well as provide the means of assessment. Thus far the results of our investigations have suggested that CAL is likely to be useful both to students and to those conducting training in several ways.

Our investigations into the application of CAL to social work education have now spanned a period of 4 years. The total number of social worker subjects on whom we have accumulated valid data is several hundred. During this period much useful information has been gained through both surveys and carefully controlled experiments in the following areas:

- a. general attitudes of social workers to CAL as a means of teaching and examining, particularly knowledge of mental health legislation, and its potential implications for practice.
- b. differences in performance and preference between computer based and ordinary pencil-paper exercises; between multiple choice and true-false exercises; between students studying and being examined on their own and in small groups.
- c. the general relationship between computer and classroom based teaching and the effectiveness of training courses in respect of legislative and social policy teaching.

An Approach to Integrating Technology in Human Service Situations

Brian I. Petheram

The paper begins by considering those aspects of human-centred organisations which are significant in differentiating them from the commercial operations which have been the focus of most effort in the introduction of new technology. The most relevant factors are: human services are aimed at achieving a qualitative change in a human's circumstances or capabilities; such qualitative criteria cannot always readily be expressed as quantitative improvements in economic terms and therefore may not be susceptible to cost-benefit analysis; typically the availability of computer expertise and experience in these areas is limited.

Given the above factors, the traditional strategies for technology integration or project selection based on economic criteria or experience of similar applications are rarely appropriate. (It should be stressed that this paper is concerned with the primary task of human services rather than administrative support functions.)

The strategy proposed in this paper is based on the notion of complementarity as developed by Rosenbrock. Briefly the concept involves consideration of the strengths and weaknesses of both humans and computers and designing the system in such a way that the best use is made of the abilities of both. A corollary of this concept is that the system is seen as consisting of both the computer or other device and the humans that use it, patients or clients as well as workers.

In order to illustrate this strategy reference is made to a project on which the author is engaged. The project is a collaborative venture between Bristol Polytechnic and the Speech Therapy Department of Frenchay Hospital, the aim of which is to use microcomputers to supplement the therapy given to stroke victims who suffer from aphasia. The condition of aphasia involves a loss of language function - comprehension, expression, vocabulary, syntax. The remedial process is often long and complex and demands many high level skills in diagnosis, assessment and treatment. There is however much evidence to suggest that a large volume of basic language stimulation can have a beneficial effect on recovery. Such stimulation can be administered by speech therapists but is very time consuming and, given the acknowledged imbalance in supply and demand for their skills, uses a lot of valuable and scarce resources on a relatively simple and routine task.

The system is being designed with the intention of complementing the role of the therapist by taking on much of the "donkey work" and it is also integrated into the whole therapy process by means of carefully designed interfaces which enable the therapist to monitor the progress of the patients' interaction with the system. Thus the computer virtues of 24 hour availability, patience, accurate recording and tolerance and repetition are used as support to the therapist's higher level skills of insight, discrimination sensitivity and professional competence.

By approaching the integration of technology on the basis of complementarity, full use can be made of the abilities of both humans and computers. It provides an alternative perspective to the traditional economic paradigm that may be particularly appropriate in the context of human services.

Electronic Village Halls - Information Technology for Rural Village Communities

Lars Qvortrup

In Sweden, Norway, Finland and Denmark a number of so-called *Information and Community Service Centres* have been established. Their popular names are "Electronic Village Halls" or just "Telehouses". Their main aim is to provide isolated village communities with access to telecommunication services. Instead of linking individual households onto a network, the I.T. facilities are within specially designed "telehouses", containing video and E.D.P. equipment which are thus at the disposal of the entire local communities involved. The facilities are intended as much for private as for commercial use, with satellite T.V. reception, teleshopping, interactive Citizens Advice Services, etc.

The first "telehouse" was established in Sweden in September 1985, and today 18 telehouses have been or are being established in Sweden, Norway, Finland and Denmark. The success of the idea (to offer communal access to telecommunications facilities, and to combine access with training services, with E.D.P. working facilities, and with social services) has been obvious.

There are, however, some preconditions for success: The first is the integration of the telehouse into the rural community's everyday life: ideally, the local inhabitants should end up using the telehouse just as they now use their local grocer's shop.

Another important issue is the integration of learning and doing within the telehouse. In the telehouse people have access to I.T. facilities, and they can get I.T. instructions.

Thirdly, the telehouse is a social service centre. Local citizens have access to Citizens Advice Services, public information, etc., and they use the telehouse as their electronic village hall, for meetings, for television watching, etc.

Closely related to the training aspect and to the social service aspect is the importance of having an "I.T. caretaker": a person who is responsible for the telehouse; who "personifies" I.T., knows how to operate the computers and the telecommunications services, holds classes on I.T., and runs the electronic village hall.

Using a Personal Computer in a Small Rural Social Service Setting

Gordon G. Ragland, Jr

The environment for human service agencies is frequently one of austerity and retrenchment. Most public sector administrators are very familiar with the refrain, "you must do more with less". In the recent past the practice of computerisation as a method of economising was restricted to those organisations with substantial financial resources. The cost of computer systems was simply out of the reach of the small rural based agency. Fortunately that has changed

dramatically. The Charlotte County Department of Social Services in rural southside Virginia has, over the past year and a half, developed numerous applications to automate the production of financial reports, statistical reports, and budget preparation forms. In addition the production of case narratives, court reports, and agency correspondence has been greatly enhanced through the use of a word processing program. The utilisation of automation technology is increasing staff productivity while requiring only a modest capital outlay.

Information Technology Applications in Long-Term Care

Manjeri K Raja

Increased awareness, competition and government regulations have brought to focus the need for better quality of long-term care. While the nursing professionals work to improve the quality of service, the increasing complexity of their tasks requires significant support from modern technology. Information technology (hardware, software and database) available today can make significant contributions towards this end. This paper presents the components of a comprehensive information system that can be implemented in a long-term care environment to improve the quality of care and aid the nursing professionals in their daily tasks. We discuss the essential features of this system, its operation and implementation. A scenario for the effective use of such a system is described. Certain limitations and problems related to the implementation of the systems in today's long-term care environment are discussed.

Implementation of Computerising District Administration

Vidya Rao

The preparation and implementation of programmes of self-sustaining development is necessarily a long-term task. It is more so because India is a traditional society in which there are pockets of rural population that are yet to join the mainstream. The planners have been introducing a variety of programmes to bring the benefits of development to these sections with varying degrees of success. The unevenness of spreading the benefits of development is partly due to intermittent nature of inter-sectoral and forward-backward linkages. The programme of developing people is basically a multi-disciplinary problem, and linking different sectors in a region and co-ordinating the process of development of the different sectors is a complex task. The district administration generates a great deal of information that can potentially facilitate balanced development. But most of the information generated is lost due to the problem of information-overload. To cope with the problem, India's Government now favourably views the use of computers. Some questions arising are:

- 1) Which system should be adopted - integrated system or process/decision-oriented approach or database approach?
- 2) How to avoid the dislocation caused during the transition period?

- 3) How to overcome the problems of reliability, accuracy and security of the data?

Lately, there have been some attempts to computerise district administration. Integrated Rural Development Programme (IRDP) is implemented by the district administration. It is a large package of development programmes under which many smaller, more specific schemes are implemented. The strategy, planning, programming, implementation, organisations involved, financing the total package are discussed as an illustration. There are problems in networking the multifarious schemes. Some of these problems are discussed. For instance, the system which should be adopted is a crucial decision in the given context. Whether integrated system, process/decision-making approach or database approach, should be chosen depends on the costs involved, the ultimate purpose of computerisation, and the socio-economic-political dynamics of the district. Because of the complexity of the problem, project implementation will take longer than desirable. It remains to be seen whether corruption will be reduced, whether people will lose jobs, and whether there will be noticeable improvements in implementation. The socio-political implications of computerising district administration will be interesting as they unfold.

Conceptual Windows in the Computer Literacy Maze

Richard Reinoehl, Thomas Hanna, Linda D. Iroff

As concepts and technologies continuously evolve, considerable confusion has developed over the meaning of the term "computer literacy". Fortunately for the human services, two pointers provide guidance through the semantic and conceptual difficulty. First, a viable definition of computer literacy for the engineer is different from literacy for the social worker. Second, literacy can and should be thought of as multi-leveled. Concomitantly, an individual's level of computer ability takes on special context when it is intersected with the individual's level of professional competency. Therefore, an operable definition of computer literacy in human services is "the ability to use or develop computer applications within the context of human service expertise". Moving toward specifics, the continuum of computer ability can be viewed as having three primary levels - which starts with a beginning awareness of computer uses, proceeds through proficiencies in using the computer, and extends to creative development. Similarly, professional competence begins with a conceptual awareness, proceeds through development of proficiency in practice and culminates with creative contribution to theory and practice. Thus, both continuums of ability can become dimensions in the creation of a nine celled conceptual matrix where any level of computer ability can operationally intersect with any level of professional ability. The viability of this computer literacy matrix can be tested against the full range of human services roles - administrator, therapist, supervisor, trainer, etc., and domains - ageing, developmental disabilities, child protection, family services, etc. Thus, the computer literacy matrix can serve as a template for systematic use in defining computer literacy in any area of human services. Such definitional power provides human services professionals with a good goal-setting mechanism for developing their own literacy and fitting it to their highest professional and practice competencies.

An Evaluation of a Computerised Sim-Game for Youthful Offenders in Educational and Group Home Settings

Hy Resnick

The presentation will report on the evaluation of a computerised sim-game designed to help youthful offenders with drug and alcohol abusing problems. The presentation will describe: 1) the computer simulation game, 2) the research methodology, 3) the population tested, 4) the settings in which they're located, 5) results and conclusions, 6) modifications of the game explicitly or implicitly suggested by the subjects, 7) implications for further development and research.

This computerised simulation game called Busted (the board version of which is described in the Journal of Residential Treatment for Children and Youth, December 1986 and the computer version of which has been described in the Journal of Simulation-Games, December 1986) is an attempt to improve the consequence-awareness capacity of problematic youth experimenting with drugs, alcohol or criminal behaviour. An early version is played on an attractive, multicoloured, monopoly-like board with dice, envelopes and cards used to provide instructions to players or present situations to which they must react by choosing one of four options. In the computer version the entire board is displayed on the monitor with instructions, situations, consequences and choices appearing as the game progresses. Points and turns are awarded to players based on the pro- and anti-social choices they make. Their decisions and accumulated points are recorded and stored for later retrieval. The game is designed for potentially or currently delinquent youth with drug and alcohol abusing behaviour and is to be used as part of an ongoing therapeutic programme in correctional or educational settings. Boys and girls, 10 to 16 years of age, are viewed as potential populations who can play and benefit from this game.

The evaluation will assess the extent to which this population enjoys playing the game and is interested in playing it again, as well as what parts of the game seem interesting and helpful. In addition, follow-up interviews will be conducted with the helping professionals working with the players to determine the extent to which the game has impacted their attitudes or behaviour.

Although the game has been designed by professional workers familiar with this population, it is expected that as a result of our evaluation a number of suggestions will be made to improve the game, some of which will be included in newer versions of the game. These revisions will be discussed.

Finally, implications for practice of these electronic technological devices (such as Busted) will be discussed.

The Oregon Cascade Project

David V. Rike

Adult and Family Services Division is developing a major change in the way we provide services and determine benefit eligibility for clients at the local branch office.

Oregonians in need of financial help from the Adult and Family

Services Division are required at the present time to go through a myriad of processes, talk with a number of employees and complete an average of 30 forms in order for the local branch worker to ultimately determine what benefits are available. The worker must rely on memory to assure that all necessary information is gathered and all potential programmes of eligibility are explored. Because of the lengthy, cumbersome and sometimes confusing process, a number of needy households fail to receive the help they need. The client is discouraged by the bureaucratic shuffle, or help is delayed by the worker's inability to comprehend the volume of rules and regulations that govern the numerous programmes the agency administers. When households finally do receive aid, too often they receive an incorrect benefit based on inaccurate information.

The solution to the problem is the CASCADE distributive database computer network. CASCADE is an acronym for Comprehensive Automated System for Client Assistance and Determination of Eligibility. The automation of 48 local branch office operations will improve the ability of workers to provide timely and accurate benefits to our less fortunate Oregonians. The elimination of redundant, complicated processes will speed up programme and benefit delivery. The CASCADE system will apply programme policy rules to client data. An electronic determination of eligibility for all programmes will ensure that households receive the benefits to which they are entitled. The reduced need for detailed policy knowledge will free the worker to spend more productive time in assessing the service and financial needs of the household.

Many procedural activities such as inter-agency referrals will become automatic. A large number of paper forms will also be eliminated since data collection will take place in an on-line interactive mode. The distributive database solution was adopted because response time and reliability are maximised in that environment.

The CASCADE Project is Federally matched at 90% and is expected to cost \$21,024,636. Quality Control Error savings alone over a six year implementation period are projected to top \$42,616,437.

Empowering Human Services Staff

Glenn M. Riley, Steven J. Ickes

Traditionally information technology has been developed, implemented and controlled by highly specialised staff communication with users through a very formalised structure. The result is that users neither well understand the process of developing computer applications, nor the constraints and limitations of technology.

The advent of microcomputers has fostered new expectations. Users, whether enthusiastic or wary, uniformly desire access to the "power" and "user friendliness" promised in advertising.

The key to success in the human services environment is for management to recognise the potential of office automation technologies and develop their plans based on the following key statement:

"What is the most important thing I do or service I provide, and

what am I doing to enhance it with information technology applications?" Stephen C. Hall, Director, Harvard University Office for Information Technology

To achieve the goals of their plan, management must make a commitment to empowering users; giving them the greater share of responsibility for the development of resources in order that they "own" the resulting system(s). Paraphrasing Abraham Lincoln, systems must be by, of, and for the users.

The process of empowering entails a great deal more than simply saying "the system is yours, run with it." Users, by current definition are not knowledgeable regarding technology and require considerable initial guidance, training and involvement to develop necessary skills. Example shows that where users are not intimately involved, systems fail.

A workable empowering strategy, however, is relatively simple:

1. Provide leadership that holds out a vision for a better future and delivers on its commitment.
2. Initially identify high pay-off areas where new technology will show an immediate and dramatic improvement in how work gets done so you do not have to sell staff on the idea.
3. Allow staff to "play" with the system for a short familiarisation period followed by quality training.
4. Establish User's Groups to share and build upon common experiences and plan future activities.
5. Establish "think tanks" composed of the most highly skilled and motivated users, regardless of agency hierarchy, to innovate solutions to real problems, and disseminate the skills required by the new technology.

Finally, nurturing the process of skill building necessary for the support of new technologies requires special management sensitivity, but finding the right people to support staff need not be a difficult process. The correct balance between purely technical and leadership abilities can be struck without over burdening staff with superfluous technical matters. The whole point is to make the process enjoyable and harness the natural enthusiasm of the participants. The right person(s) for the job (with strong interests in microcomputer technology and the appropriate people skills) probably works within the presently existing data processing structure or one that is accessible. Recruiting them is simply a matter of getting beyond the formal organisational framework that is hiding them.

Using Computers to Build Relationships with Organisational Supporters

Martha L Royer, Carlela Vogel

Human service organisations are founded on missions of public service, whether it's a service to an individual in need or a service to a community towards improving the quality of life. Fundamental to an agency's ability to fulfil its service is the need to develop and build relationships with clients, members and other organisational supporters.

Until recently, human service practitioners have not had the tools to record information efficiently about supporters. Consequently, they typically spend more time researching relationships than developing them.

Computer technology has afforded human services the means by which to better utilise resources of time and money. Microcomputers have proven their usefulness in producing professional literature, promotional materials, and personal appeals for support. Human services have also turned to microcomputers for help in managing information about supporters and their interests in the organisation's mission.

Using database management software, practitioners can easily create and maintain basic lists of information. More sophisticated (relational) database packages offer the means to analyse demographic information relating it with support histories, although these packages often require a higher degree of computer expertise to design and maintain.

Specialised database software has been developed to lessen the burden for human service professionals who do not have computer expertise. These packages are designed to record biographic and gift information, and to produce efficient access to data about a given group of supporters. Using donor management software, practitioners can cultivate specific interests of their contributors and analyse the results of the agency's development efforts.

The presentation will educate human service professionals regarding the use of computer technology for building relationships with organisational supporters, identifying and describing software packages which will enhance development efforts. Presenters will:

- Identify how human service organisations are utilising computer technology in their efforts to develop supporters and communicate with clients.
- Discuss types of information typically collected for cultivating organisational support and promoting client services.
- Demonstrate how to identify an agency's need for information concerning organisational supporters.
- Provide guidelines for assessing the strengths and weaknesses of donor management packages.
- Present direction for selecting among software alternatives.

The presenters will distribute related instruments and guidelines developed as a result of research supported by the Technology Resource Consortium and the Benton Foundation. A self-administered needs assessment instrument designed to analyse an agency's information needs is currently being developed. Standardised instruments for reviewing the strengths and weaknesses of donor management software have been created and tested for validity. At the conclusion of the project, in the summer 1987, reviews of leading donor management packages will be summarised and available for distribution. These products will be presented at the conference and distributed among participants...

With computer technology human services have the means to manage client and donor information economically and efficiently. This presentation will offer practitioners the knowledge to use this technology to build and develop relationships with their supporters in order to better serve the public and effectively engineer social change.

Desktop Publishing for the 90's

Cynthia J. Rudy

"We have it in our power to begin the world again".
Thomas Paine.

Information is now doubling every two years around the world. How will this effect the human services industry? How can social services relay valuable information to those people who need it most within a crucial time period. Once the information is out, will it portray pictorial images so that illiterate cultures can gain this essential knowledge that can vastly change their health and wellbeing.

Due to the high demand for personnel in the social services industry to help select, purchase and incorporate desktop publishing within a specified budget, C. Graphics has developed an unbiased seminar to speed up this decision process saving organisations time, money and frustration. This seminar is for anyone who is curious about this most talked about segment of the micrographics industry, desktop publishing.

What will be covered:

- Desktop hardware/software and upcoming products
- How it can be cost justified
- Man is not an island networking
- Examples of flyers, brochures, etc.

Benefits:

- Cut publishing costs in half
- Learn how to make critical information accessible quickly and easily to internal and external facilities
- Costs of researching and hiring a consultant can be reduced to a minimum due to the extensive product overview covered in this seminar.

Desktop publishing has become a revolution in the way we communicate. This is an exciting fast moving time in the history of communication. Desktop publishing is providing new opportunities to connect the social services industries and make a difference to those countries that have gone without valuable leading edge information.

Technology over Time: Lessons We Should Have Learned

Ramona R. Rush, Elizabeth B. Shear,
Janrose C. Zingg, Judy A. Goodrich,
Linda A. Porter

Women, blacks, Hispanics, older persons, disabled persons . . . John Naisbitt's **Megatrends** idea about hi-tech/hi-touch historically has been lost on these lo-incidence/lo-power

groups. It is always an amasement that more than three-quarters of the world's population (in developing countries) or the "better half" of the same population (women) have been treated as "minoritised majorities" and kept out of war and board rooms where most of the decisions about technological advances are made.

The proposed paper traces how these "tributary" groups were blocked out of the mainstream of technological advances. The greater part of the paper, however, will examine how these groups, especially women, are faring today with technology. In particular, an old communication device of women, networking, will be examined from the perspectives of satellite and on-line computer applications.

The final segment of the proposed paper will take the futurists' motto - Thinking Globally, Acting Locally - to explore whether a community development model of communication could (techno) logically function under a "one-world" concept.

Using the System of Data Processed Applications in Some Swedish Municipalities

Tapio Salonen

Sweden, as many other western countries, has experienced a dramatic increase of means tested economic assistance, public assistance, since the beginning of the nineteen eighties. Fully half a million inhabitants were, during 1986, forced to apply for public assistance - for a shorter or longer period of time - in order to manage. At present every twentieth inhabitant needs this type of assistance, which is administered by social workers at the social welfare office. This increase is worrying, for many it is a sign of the incomplete welfare state. We need to know much more about the actual reasons behind this increase in public assistance - why so many people are forced to seek economic help.

This presentation emanates from a research project where we study the effect of using the system of data processed applications in some municipalities. How does this system affect the work, the administration, of public assistance and our knowledge about the actual reasons behind the need to seek economic help?

The project is supported by the Swedish Ministry of Health and Social Affairs, Commission for Social Research (project no 86/150). The aim of the project is to develop and test the registration system and its capability to deliver a correct picture of the economic need in a social case. It is designed as a longitudinal register-study. It also concentrates on deeper analysis of the increase in public assistance and its causal connection.

With the right computer program such analysis can be made directly from the current registrations. A special part of the research concerns new facts about what causes the dependence on public assistance.

Social Implications of Robotics: Perspectives from a Developing Country

Stephen Schelbe

This paper reviews the current state of robotic technology, identifies trends in both technological development and robot use, and presents a preliminary evaluation of how robots, once incorporated into the productive system, will create demands for innovative social arrangements.

Although present robots are limited in function, advances in the state of the art promise high levels of sophistication and ever wider ranges of application. While sales in the robot industry, even on a world level, total less than five billion dollars, production is growing at a rate above 20 percent per annum. The robotics industry has gained credibility and emerged from a previous aura of science fiction to the reality of the factory floor. As a result of the use of robots and other information based technologies, full factory automation (FFA) and flexible manufacturing systems (FMS) will increase in importance, especially in the more developed countries. Robot based innovations will enhance productivity in centre countries and will probably threaten hard gained advantages achieved by LDC's especially in those productive sectors which rely heavily upon cheap labour for the maintenance of a competitive edge.

In the long run, robots will have an enormous potential for increasing real wealth in both more developed and less developed nations. The full realisation of this possibility seems to depend less on technological improvement than on the introduction of new social arrangements. These include both a reconceptualisation of employment as the principle category for distribution of wealth and self-esteem as well as a redefinition of the conditions of market exchange between countries, especially between the "north" and the "south".

Integrating Technology into Service Delivery for Persons with Developmental Disabilities

Dick Schoech, Al R. Cavalier, Betts Hoover, George Kondraske, Carrie Brown

The Integrating-Technology Into Service-Delivery Project is a three-year project funded by the Texas (USA) Planning Council on Developmental Disabilities. The goal of this project is to design, implement, and evaluate a model strategy for integrating technology into the present developmental disabilities service delivery system in an urban community. The model strategy is being designed and implemented by a consortium of five education, research, and service delivery organisations in the Dallas/Fort Worth, Texas geographical area. Principle components of this model strategy for service providers are (a) the development of a computerised system for assessing a client's potential to benefit from use of an assistive device, (b) the development of an electronic network comprised of an electronic bulletin board and mail system to provide information sharing among community service providers, consumers, and researchers, (c) the development of a computerised database of resources on the application of technology for persons who are disabled, and (d) the training of

service providers on the assessment instrument, electronic network, database and various assistive devices to enhance the capacity of their agencies to employ technology in their service delivery.

The consortium of the four lead agencies are the University of Texas at Arlington (UTA) Graduate School of Social Work, the Centre for Advanced Rehabilitation Engineering (CARE), the Bioengineering Program of the Association for Retarded Citizens of the United States, and the Dallas Centre for Independent Living. The project will also involve a large number of various service providing agencies in the Dallas/Fort Worth metroplex. In this project, approximately 500 clients will be screened using the project assessment tool to determine the need and readiness for an assistive device. At least 300 clients will be screened using a previously developed system for comprehensive quantitative measurement of functional capacity, and 650 will receive training on the appropriate use of various assistive devices.

The electronic network interconnects numerous individuals, research organisations, and service providers. The network is accessed at different levels and is available free to any subscriber at the initial levels. Subscribers at higher levels not only have access to the electronic mail system, but also are able to access the database. The database contains: (a) the names and addresses of manufacturers and vendors of assistive devices, (b) bibliographical information on the use of technology for persons with disabilities, (c) the names and addresses of authorities/users of various assistive devices, and (d) resource organisations in the field of disabilities and technology.

First Generation Expert Systems in Social Welfare

John R. Schuerman

This paper considers initial experiences in developing expert systems in the field of social welfare. The paper draws on the author's experience in working with agency staff to develop expert consulting systems. Included in the paper are discussions of the following issues:

- Requirements for expert system interface engines, including certainty factor computation, rule selection algorithms, etc.
- Problems of representation of knowledge in social welfare: does this area present new challenges to traditional ways of representing knowledge? Are production rule systems adequate?
- What factors are legitimately included in expert systems? Social welfare decisions are usually affected by a large number of considerations that are external to the facts of a particular case. Such considerations include organisational and political constraints on decisions, availability of resources (including the worker's time and energy), and caseload factors (the size and compositions of the caseload of the worker, office and agency). All of these factors could be included in an expert system but if we wish to improve instead of just mimic practice, should probably be excluded. A framework for thinking about this problem is presented

- How "deep" is knowledge in social work? Is the knowledge we have very complicated? Do we need expert systems after all? Will there be second generation expert systems in social welfare?

The Continuum of Care System: Decision Support for Child Placement Practitioners

A. James Schwab, Jr., Michael E. Bruce, Susan S. Wilson

The Continuum of Care System began seven years ago as a research project to study the differences among children placed in different types of out-of-home care, i.e. foster family care, basic child care, group homes, residential treatment centres. One of the project's goals was to examine the feasibility of creating a computer model of the service delivery system based on the characteristics of children admitted to each of the different types of care.

The statistical technique of discriminant analysis and classification was found to do a better than expected job of differentiating children in various types of care. Moreover, the classifications for individual children were judged to be appropriate by practitioners expert in the field of child placement.

Utilising this finding, two software packages were developed to provide child placement practitioners direct access to this information. MATCH enables a practitioner to interactively enter the characteristics of a child in need of placement and receive back in seconds a list of alternative programmes ranked according to the child's similarity to other children recently admitted to each programme. This list of alternative programmes guides the practitioner to apply for admission to residential programmes who are likely to accept the child into placement. In addition, the list of prospective programmes may suggest alternatives that a particular practitioner was not aware of.

The second software package, PROFILE, provides a comparative analysis of the children accepted into placement at each of the facilities included in the study. PROFILE can be used to answer questions about which facilities have recently accepted children with specific characteristics such as low IQ's or a history of fire-setting.

PROFILE has provided valuable feedback to institutional administrators who participate in the project, by providing the information needed to compare their institution's population with that in other programmes. In a number of cases, this information has been used in the budget documentation to detail the unique features of a programme's service population.

MATCH is currently in its third revision and PROFILE is in the process of being revised for the second time. Suggestions for revisions and features have come both from practitioners directly and from project staff responsible for training practitioners to use the software. In our experience, many practitioners avoid using the program because of their limited skills in touch-typing and lack of familiarity with using computers. They prefer to telephone the information about a child to project staff and receive information back verbally.

At the present time both packages reside on a university mainframe computer and are accessible throughout the state with a terminal and a dial-up modem. The software is in the process of being converted to the mainframe computer at the state's child welfare agency and to an IBM-PC to enhance access by this particular group of child placement practitioners.

Application of this technology is viewed as potentially useful in other types of human services, where selection among service alternatives is a critical decision in service delivery processes.

Computerised Simulation Game for Treating Street Corner Youth: Developing, Applying and Measuring Results.

Moshe Sherer, Gideon Goldstein, Michael Hanan

Juvenile delinquency is generally explained as a result of peer group influences. Values and norms of behaviour are acquired through association with other youth in groups. Cressy (1955) suggested that treating juvenile delinquents should thus be done in groups with an excess of positive norms.

Computerised games are very attractive to youth in the western culture, but juvenile delinquents are usually introduced into the world of computers through an unfavourable route. Computers are and should be used for educational purposes; thus they may contribute in the treatment of juvenile delinquents. Based on the work of Resnick, we developed a computerised simulated treatment oriented game to be used with juvenile delinquents treated by street corner workers.

We assumed that exposure to a computerised game involving group dynamic around various moral issues will force participants to face their views and change norms and ways of behaviour. This would come as a result of their need to openly deal with their belief system and the influence of the group.

The game we developed is board based, each player moves in turn according to a dice generated number. Consequently the player is being asked to solve various moral dilemmas which simulate real experiences of the juvenile delinquents' world (Sherer, 1985). The group (under an instructor's supervision) gets into short discussions about some of the issues and then the group assigns the player points for the choice he made. In other situations there is no group discussion. Following a choice made by the player, the computer gives one result (randomly selected) and points - accordingly. Points are being added to the players account. The goal is to achieve as many points as possible. Each session is followed with a group discussion by the worker or the instructor; dealing with the game, the choices made and results.

We used a peer norm indicator (Grissum, 1977) to measure the norms of the participants; and a moral development measure (Ziv, 1976; Sherer, 1985) to measure aspects of morality. Demographic as well as other necessary data will be collected from the workers themselves.

In the convention we intend to report our experience in the developmental processes of the game as well as results of the application period.

A Micro-Based Decision-Support System for Managing Aggressive Case Management Programmes for Treatment Resistant Clients

Paul S. Sherman

The City of Denver, Colorado, is experimenting with an aggressive, street-based case management model in an attempt to provide more cost-efficient and cost-effective services to clients who are 1) chronically mentally ill, 2) *and* have a history of being resistant to more traditional centre-based programmes, 3) *and* are judged to be dangerous to themselves or others, 4) *or* are homeless, 5) *or* have been inappropriately incarcerated in jail.

The presentation will trace the process of the development of a micro-computer based system written in DBASE III+ designed to provide decision support information to programme management. The system is designed to provide clinical information on caseloads, the allocation of staff resources to clients based on clients' clinical characteristics, notification and tracking of critical incidents (clients who have unexpected hospitalisations, or incarcerations), changes in clients' needs for intensive case management, cost-outcome information, etc., in addition to the mundane tasks of preparing billing, accounting for staff travel, and accounting for client-payeeships.

The presentation will focus on how the system's design process was primarily guided by the kinds of decisions that programme managers have to make in order to pro-actively administrate this type of aggressive case management programme.

Microtechnology for People with Special Needs

John T. Shermer, Chris Price

Developments in Microtechnology over the last decade have seen initiatives in applying NEW technology to people with handicaps, illness or behavioural problems i.e. 'special needs'. Primarily, these initiatives in equipment have been directed toward making their life as normal as possible.

Birmingham started to explore Microtechnology for its mentally handicapped clients and then for 'difficult' juveniles. Using the computer as a teaching/instructional aid was soon found to be stimulating and motivational. Numeracy and literacy skills are enhanced as the individual becomes aware and has the ability to communicate with the computer. Group work with the computer greatly enhances social skills and co-operation.

These benefits have been made available to people with a physical handicap through specialist interfaces (a wide variety of switching mechanisms). This variety has enabled links to computers to be designed to meet particular needs of individuals and has assisted greatly in communication. Microtechnology is now used with all client groups. People with special needs and in day care, residential and rehabilitative settings. There are over 120 microcomputers in more than 50 locations.

We have standardised on the use of BBC microcomputers since this equipment offered the necessary ports for connection of different peripherals and there is a wide range of software available. Our efforts have been directed to using and adapting software to meet our client's needs. In the early stages of development, when Birmingham sought leadership and direction to develop computers directly with people with special needs, no one central agency was available for support and advice. Instead, what was found were isolated pockets of development being made by several independent agencies; often duplicating work and re-inventing the wheel throughout the country. Our enquiries revealed that many other local authorities and agencies recognised the value of this work and were seeking assistance and a lead.

There needs to be linkage between agencies interested in using microtechnology to support people with special needs. A co-ordinating centre(s) is required and the need for this development is already accepted by many agencies.

What is required now is action. Such a centre could provide a clearing house for developments and training through distance learning packages or direct courses, enabling services to grow with demand. These services must be marketed so the centre covers its cost through direct charges, subscription or grants. I am pleased to say that Birmingham is contributing its experience and expertise to help achieve this aim by establishing the framework for a Centre for Special Needs Technology.

Computers in Social Work: Emerging Issues in Developing Countries: A Proposal

R. R. Singh

Impressed by the results in the developed countries, industrial and commercial establishments and autonomous corporations in the developing countries are increasingly considering the application of computers to rationalise their work. Entrepreneurs and scientists in this promising field are impressing upon the professionals, the bureaucrats and the political leaders about their effectiveness. Since the utility of computers in diagnoses is well-known, some entrepreneurs have installed computer terminals in government offices free of charge to demonstrate their use in other ways.

The government proposes to involve about 10,000 educated housewives around the already established National Information Centre who have got their own telephones. They will be provided with terminals for data-entry jobs in order to increase their social and economic participation in development. However the question regarding the social and economic status of these telephone-owning urban elite women and their percentage in the womenforce is generally pushed under the carpet by computer scientists and high-pressure salespersons. Banks, courts, insurance and travel agencies, research and educational establishments, meteorology and space departments, defence and police, etc. have either already introduced computers in their work, or have taken initiatives for their installation. The argument in favour of computers is that they take over mundane jobs so that available skills could be used elsewhere, but the term

'elsewhere' is not spelt out. The fact that the developed countries have either passed laws or have evolved systems for protecting the stored personal records and data, and in the process have debated broader political and ethical questions, is generally ignored. Also ignored is the fact that the developing countries are 'soft states' in terms of enforcing legislations, and in implementing social and economic reforms and administrative decisions.

It is made out that computers will be used for new applications; they will aid workers in their work; and therefore they will not replace workers or create situations of job-displacement. They will gather, store, process, interpret and transmit information at a fast rate. Workers and their unions however are not convinced of this argument.

Added to these is the fact that the entire social assistance programme in the welfare sector, i.e. identification of beneficiaries and disbursement of grants, etc. is politically determined. The computer is bound to interfere with this "constituency-nursing" approach and the initial enthusiasm about its use may soon evaporate in the face of counterproductive and stark political realities later. Further, service strategy is increasingly being rejected by social activists in favour of organisation and empowerment to help the deprived in large numbers in developing countries. The new system may therefore adversely affect community participation of the poor and illiterate and, in any case, it will require a high level of education.

These aspects, which relate to the broader issues of social justice, distribution and human rights, need to be critically examined before considering computer application in social welfare so that the new facility is properly utilised.

Communication Situation in Kerala: Integration of Social Work and Communication Strategies for Technology Transfer and Technology Utilisation

D. Sivakumar

A study on Communication Situation in Kerala shows a high level of development of mass media and interpersonal communication in Kerala. Social work and Communication played important roles in bringing about Technology Transfer and Technology Utilisation. Very often the Social worker played two roles, both as social worker and as communicator, with the slogan that every social worker has to become a communicator and every communicator has to become a social worker. Consequently the quality of life of the people of Kerala improved along with progress in Developmental Social Work and Development Support Communication. There is no shortcut to Technology Transfer and Technology Utilisation other than scientific practice of social work and communication with necessary linkages, co-ordination and multi-disciplinary collaboration. Activities of the Indian Association of Trained Social Workers (IATSW) and World Census on Social Work Research (WCSWR) have given new impetus for the developments in Developmental Social Work, Development Support Communication, Therapeutic Communication and multi-disciplinary co-operation in all fields of work by human service

agencies and personnel. In this study Technology Transfer and Technology Utilisation are considered as important programmes under Development Social Work.

The Development and Use of a Comprehensive Computerised Clinical and Fiscal Management Information System for Mental Health

Mary E. Smith, Paul S. Sherman, John F. Muldoon

The Ravenswood CMHC (RCMHC) implemented its computerised management information system in 1978. During the last 9 years, the CMHC's use of the system has become fairly routine, and clinical, management and administrative staff have come to depend upon the information which is generated.

The Ravenswood MIS provides us with the ability to perform a wide range of internal monitoring tasks which are used for supporting management decision-making, quality assurance, the allocation of resources and programme evaluation efforts. Additionally, we have been able to meet external demands for information, including state reporting and federal reporting (when that was required) as well as requests for information from other funding sources.

The Ravenswood clinical information system component includes the following information: problems presented by clients, problem severity and duration ratings, level of functioning assessments by therapists, client stressors and resources, suicide and homicide potential, previous mental health treatment history, client financial, demographic and other descriptive information, as well as complete documentation of all service transactions.

The fiscal package includes account payables and receivables and general ledger as well as programs for generating statements and third party billing formats. A report generator allows the user to generate customised reports which incorporate any client clinical and fiscal information which is captured through data input. A variety of formatted reports provide managers with the capability to monitor key performance indicators with regard to staff performance as well as programmatic and agency performance.

The Ravenswood MIS was designed to be flexible, require a low amount of maintenance and easily transportable. The system is dictionary driven so that changes in internal as well as external reporting requirements are easily implemented. Little clinician time is spent in coding information and the system provides immediate feedback to data input personnel with

Towards an Information Based Curricula for Human Service Personnel

Norman J. Smith

Computers are increasingly being used in professional courses to educate human service personnel. These uses are now not only confined to traditional applications such as the analysis of data in research methods programs, or for actual research projects. Computer assisted learning, as well as computer

assisted instruction, are witnessed in areas like social policy analysis and counsellor training. It is to be expected that, as further development takes place in software, more use will be made of the computer as a learning aid. But these changes will have a greater impact on the whole of the human service curricula over and above that usually associated with the implementation of technological aids to learning.

The aim of this paper is to propose that future curricula development in human service education will need to be based on an information based approach.

The paper will start by looking at the history of computers in the education of the helping professions. Using an example of a simulated case situation developed by the author some years ago for teaching purposes, it will show how changes in computer technology have altered the way we are approaching similar assignments now. The implication of these changes will be explored specifically related to the changes in thinking we are now adopting towards information and information values.

Some general proposals will then be made relating to the way curriculum development might develop based on an informational approach to subject matter and teaching stance.

These will include the nature of information itself in the context of the helping professions, the role of enquiry and knowledge generation and the changing emphasis on services provision in an information kind of society.

Uses of Computers in Human Services and Mental Health

Steven J. Stein

This workshop will examine the various uses of computers in Human Services and Mental Health. Some of the topics covered will include the role of computers in Office Management, Research, Education, Diagnosis and Assessment, and Therapy. The focus will be on the day-to-day activities of the mental health practitioner and how computers can impact and assist the clinician in these activities. Many of the examples to be presented are currently in use by professionals across North America. As well, some new developments and future directions in the use of computers for treatment and assessment will be explored. Practitioners will learn about these new developments and be exposed to uses that they can readily adapt into their own practice with relatively little additional training. Participants will increase their sophistication in the ability to evaluate computer programs designed for Human Services and Mental Health. They will increase their knowledge about both the software and hardware that can be used to effectively augment a clinical practice. There will be actual demonstrations of software showing how it is used along with clinical case examples being presented.

Computer Assisted Assessment of Social Work Practice Skills: Some Applications of High Technology

George C. Stonikinis Jr

The profession of social work faces challenges and opportunities as we move from a nationally based or focused economy to a larger and more interdependent global market system. International redistributions of labour and production already find shifts in the dominance of economic sectors as many countries deindustrialise in the move from an industrial base to one more characterised by "information systems". These structural readjustments come with "high technology" and are more often the result of a careful long range perspective rather than expediency based management. Contrary to the perception that alienation, isolation, and impersonality characterise high technology environments, these modern systems actually emphasise increased human interaction and recognition of human beings as resources with potential. Even in economies where the central and strategic resource is "information" its application for production and consumption requires the human interface. The "sunrise" industries of high technology; electronics, robotics, biotechnical applications, lasers, computers, and communication carry the potential for enhancing and utilising human resources. As these new high technologies improve previous technological applications and develop new and innovative directions the management of human resources will have to address training for skills for applying and maintaining high technology systems. The concept of information as a "manageable resource" used to design cybernetic and responsive systems focusing on outcomes is central to the development of viable curricula for educating and training professional human service workers for high technology environments. Preparation for practice requires use of the very high technology competencies that viable professionals will have to possess. Information system management and accountability are central to the educative task and, together, serve an integrative function while contributing to a programme's structural integrity. Based on the reality that learning is a building process incorporating hierarchies of ever increasing abstract complexity, computer assisted analysis enabled the student in the field to enter into the computer data base a skill, task complex, or problem and receive a highly individualised analysis indicating all of the following:

- The student is given a specific strategy for overcoming the problem the student is having to attaining competency at the designated skill or a technique for problem exploration is presented.
- A list of bibliographic references, content areas, and concepts are supplied that the student should review in order to overcome the competency deficiency.
- An annotated list is provided of all courses the student has completed in the Longwood Program that assist in building the specific competency of concern and an explanation of what each course contributed to that competency (This information is critical, but generally absent, in designing a curriculum).
- Specification of related professional competencies that may be "at risk" are identified if the student is experiencing difficulty.

The enhanced integration of class content with the experiential and practice realities of the field is the primary benefit to the educational pursuits of the Program. While consistent with the thrust towards "computer literacy", the application of portable computers serves as a model for students of the wide applicability and potential for improved performance that can be gained through the use of high technology and information systems. The ultimate purpose of high technology applications for social work is the improved quality of professional practice and subsequent impact on the quality of life. Social workers have the potential to become a driving and directing force in emerging high technology. A central issue is whether this social change will shape social work involuntarily and by imposition, or, will the social work profession employ high technology to establish new roles of promise?

Artificial Intelligence in Higher Education and CBT Technology

Marie Stratil

The emergent new technology allows the usual Computer Based Training (CBT) equipment, usually a microcomputer equipped with a soft disc and a monitor, to be linked to speech synthesis, speech recognition, video disc, video tape, overhead slides and audio recorder, and lately also to new interactive television satellite technology.

However, the hardware complexity adds to the software complexity. It is becoming very clear that such an educational environment needs intelligent interface in order to aid the complex communication requirements between the user and the hardware and also internally between the hardware elements themselves.

The recent advances in cognitive sciences also allow intelligent handling of the teaching material. A training system has been developed which is driven by the desired teaching strategy, as opposed to the usual student driven or teaching material driven CBT approach.

This teaching strategy may be described by the cycle:

find area of educational deficiency
set goal to satisfy this deficiency
satisfy goal by:

- a) retrieving relevant teaching material from educational knowledge base;
- b) satisfy subgoals of student proficiency layers;
- c) when proficient, re-test randomly to check retention.

Application of such a strategy within CBT advances the training efficiency by recognising existing areas of the students' knowledge and incorporating these into the overall model of the students' understanding of the subject; thus addressing only the areas of training need.

The Social Programme Simulation Generator: Modeling Programmes to Improve Service

Merlin A. Taber, Louis V. DiBello

Simulation of social programmes on a microcomputer, we believe, is the most interesting computer application for social administration. Practical and theoretical benefits seem great. We believe such simulations of the personal social services are especially difficult for two reasons; the business orientation and business language of much available software and the lack of a framework to describe personal social service programmes.

This paper describes the work of a social administrator and a computer scientist to solve these two problems. The first author, an academic, brought a framework for describing personal social services including concepts and ideas about their relations. The second author, a computer scientist, brought a team of programmers, a history of system design for social service, and a willingness to engage in trial and error system building. The first products of our work are database programs, documentation in the form of worksheets and text, and a Monte Carlo procedure to expand the databases while retaining selected qualities. Further work, now underway, includes investigation of how well the expanded databases reflect important relations in the initial small databases. Programs for other data bases, and for their interrelation to simulate social agency operations, are further in the future.

Three pieces of software are to be demonstrated at HUSITA. The first database software is for client characteristics, the second for service events over time and time specific outcome measures. Both databases include analysis and reporting capabilities tailored to personal social service needs. The Monte Carlo procedure has been adapted to the different character of each database, but permits joint simulation. As a result, it is possible to merge the two databases to ask such questions as what type of client received most service, or what client characteristics are most highly associated with successful outcomes.

Making the Therapist's Prognosis of Stroke a More Scientific Process

Simon B. N. Thompson, Michael J. Coleman

Probably the most significant current clinical application of microcomputer graphics is in the rehabilitation of hemiplegic patients and, in particular, those suffering paralysis as a result of a stroke (e.g. Bazzini et al, 1984). The potential of computer-assisted visual feedback therapies has not been fully recognised with many established therapies remaining denied of the range and versatility of computer technology. Such is the case with established oscilloscope-based therapies like electromyography (Wolf & Binder-MacLeod, 1983; Thompson, Coleman & Yates, 1986; Thompson, 1987). Therefore, a pilot study was conducted at the School of Information Science, Portsmouth Polytechnic, in conjunction with Queen Alexandra Hospital, Cosham, Hampshire, to discern the place of a microcomputer-oriented paradigm in the assessment of early and late adult stroke patients (Thompson, 1984).

Further developments were tested at Cedars Medical Rehabilitation Unit, Nottingham (Thompson, 1985) and an area of research subsequently focused on the prognosis of stroke. This has now included the design and implementation of computerised assessments for occupational therapy (Thompson & Coleman, 1987), extensive collection of stroke-related data and the formulation of a stochastic model of stroke prognosis. The latter is considered to be the first of its kind in the UK and steps are also being made towards the design of an expert system based on this configuration. It is felt that this will significantly contribute to the changing attitudes in the paramedical professions, away from what was previously considered to be subjective assessment, towards a more scientific methodological approach.

Usage of Computers in Hong Kong's Social Welfare Agencies - Current Trends, Problems and Issues

Kcon Wah Tsoi

Among third world nations, Hong Kong may be regarded as a comparatively developed and modernised territory. Computer technology has been rather widely used in financial and commercial institutions, public utilities and some of the public services. However, the use of computers by social welfare organisations is only a recent phenomenon. One of the leading voluntary welfare agencies in Hong Kong has only just installed computer systems in different service branches. Other organisations, for example, the Social Welfare Department of the Hong Kong Government and the Hong Kong Council of Social Services (an organisation which represents the voluntary welfare sector) are a few steps ahead. They have been using computers for some years for compiling information concerning service provisions and service recipients and for monitoring the development of some social welfare programmes. These two organisations, and a very limited number of other voluntary welfare agencies, have also established research units where computers play an important role. But despite the fact that some administrators and social workers have their own personal computers, the use of computers in the daily administration of welfare agencies and in monitoring service provisions and developments remains at an initial stage for most agencies and an unexplored area for others.

The reasons for the lateness in applying computer technology in welfare agencies are many. Social workers' general ignorance and indifference concerning scientific and sophisticated accounting and reporting procedures could be one of the major reasons. Moreover, there is a feeling among some social workers that computer technology and welfare services which call for a human touch and flexibility are incompatible. Lack of training in the use of computers and other sophisticated techniques in monitoring programme development and service delivery is another major factor. Resource constraints also pose a serious hindrance. Over the past few years, most welfare agencies have concentrated their resources on meeting voluminous service needs. In fact, welfare agencies usually have to raise their own money for installing computers and recruiting technicians.

The purpose of this paper is to review the current usage of computers in social welfare organisations in Hong Kong. Through studying the experience of some welfare agencies, the difficulties and issues in introducing computer technology and the prospect of expanding its usage in the provision, management and development of welfare services are discussed.

Three Lessons from Automating Social Services

Erik A. Van Hove

The paper will relate a large scale automation project of the city of Antwerp social services agency. Besides running a network of 17 public health care institutions, this agency is entrusted with the care of the needy and all persons who somehow fall through the maze of the social security system.

After preliminary planning studies which recommended a decentralisation of the agency in about twenty neighbourhood centres, a communication network was set up into which all data on clients are fed by the case workers. Decisions on aid and the actual disbursement of financial assistance are largely automated.

The paper will discuss the approach taken in carrying this programme through, the pitfalls encountered and the lessons to be learned from this confrontation of two different worlds: social workers and their clients on the one side, and the slick world of the system analysts and their computers on the other.

Human Services Computer Networking

Gerald W. Vest, Mike Connealy, Reba Nichois

The New Mexico Chapter of the National Association of Social Workers has established a pilot project to develop a state wide human services computer network in New Mexico. A self-sufficiency grant for chapter development provided funds for a microcomputer with a large capacity hard disk, a printer, various application programs and six high speed modems. Five of the modems have been distributed throughout the state for the purpose of establishing network system nodes. The microcomputer, which services as the primary system, is located in the Department of Social Work at New Mexico State University in Las Cruces, New Mexico.

The project was designed to apply computer technology to human services problems and tasks, and to provide a modern, high-speed communication network which supports NASW goals and objectives. The primary system in the network is a 24-hour, on-line electronic bulletin board system orientated toward human service concerns, but the system is open to all interested parties. The bulletin board system (bbs) can be accessed by virtually any computer and modem combination. Through the use of a public domain communication program known as FIDONET, the project system is linked to existing national and international networks including the national CUSSnet system (Computer Use for Social Services), thus providing a large user base from the very beginning.

The goal of the project is to link existing networks and social workers, human service providers and professional

organisations as well as other existing computer user groups and bulletin board systems. There are several special interest group sections on the bbs including Ageing, Counselling, Grand Rounds (medical issues), Vietnam, AIDS, and NASW issues. AIDS, Vietnam and Grand Rounds are set up on an echo mail basis which provides for information and communication on a national level. The file section of the bbs allows the user to upload and download data regarding each of the special interest areas.

Users are introduced to the network through group presentations, training sessions and individual tutorials. Common problems and tasks addressed by the system include use of resources, social work education, information and referral and professional development. Computer technology greatly enhances the provision of information brokering by social workers and others engaged in the helping professions.

Psychological Assessment in Severe Physical Disability

Sarah L. Wilson

There are incidences of individuals with severe physical disabilities who have been wrongly assumed to be also mentally handicapped because the severity of their impairments prevented them from expressing their abilities; until, by chance an effective method of communication was discovered for them. Happily such discoveries should no longer be left to chance, thanks to the arrival of the microcomputer. This paper describes the development of a computer based system to enable the psychological assessment of people with very severe disabilities. The project has required special developments in both hardware and test software.

The principal developments in hardware have been providing a range of special switches which allow the severely disabled person to respond to the test items; these will be described. To cope with visual disabilities two forms of "voice-over" have been developed.

The test software produced has been subject to a number of constraints. Whenever possible tests are selected that can be responded through a single switch. In some instances entirely new tests have had to be developed. There are limits on the graphical material that can be used because of insufficient resolution of monitor screens. People with severe physical disabilities can fatigue very easily which restricts the length of tests that can be used. These are some of the problems, there are also many advantages to presenting tests by computer.

This paper will discuss the advantages and problems of the development of such a system and suggest some alternative approaches to enabling the assessment of people with severe physical disabilities from those adopted by the author and her colleagues.

Child-Care Placements: A Knowledge-Based Systems Approach

Mike J. Winfield, Rupert A. Simpson

Knowledge engineering is a complex and difficult task involving two major activities:

1. eliciting knowledge from an expert (or experts) in a prescribed field
2. representing that knowledge in a computer-based system.

In this paper we aim to discuss various aspects of the knowledge engineering process as applied to Child Placements within the Wolverhampton Social Services Department.

We aim to outline the following:

1. the roles of key personnel involved in developing 'real' knowledge-based systems
2. the attitude adopted by personnel to their respective tasks
3. the impact of their views on the final system.

Furthermore, we shall discuss a number of problems encountered during the knowledge-engineering phase of the Child Placements project and highlight the methods by which these problems were solved.

An initial prototype Child Placement system has been developed using the KES expert system shell. This prototype will be used as a vehicle for discussing and demonstrating the results of the knowledge engineering exercise.

This paper should be of interest to managers, domain experts and potential knowledge engineers contemplating or actively participating in the development of a knowledge based system.

Training Tomorrow's Human Service Practitioners

Thomas Wisbey

Human service workers have tremendously difficult jobs because of the multi-roles they are expected to perform. Most educational programmes do an excellent job helping the practitioner or potential practitioner to understand various roles he/she will need to play in order to help become a powered professional. Individual skills are identified and enhanced through the learning process. The practitioner can develop feelings of inadequacy when he/she falls short in delivering one of the many expected roles. Oftentimes, practitioners have a great deal of trouble in dealing with change in an increasingly complex world. Today and tomorrow holds a great deal of promise for the practitioner in that technology has developed tools which can enhance their skill in performing the various roles required. Today, these tools lie in the personal computer, robotics and the imagination of the human service provider. Educational institutions have a responsibility and obligation to provide pre-service training, in-service training and continuing education as it regards the role of technology for people/client empowerment.

The role of human service practitioners has not changed much in the past twenty years, but the climate in which these roles are to be played has become increasingly complex and full of personal and social dilemmas. Human service practitioners will always need to possess a respect for people's rights and needs. They will always need to combine knowledge and skill in order to help people or systems become empowered. The

human service provider will continually need to be flexible and is often in a position of providing services as a care giver, broker, data manager, advocate, outreach worker, teacher and consultant. It is easy to experience role confusion and conflict. Therefore, tomorrow's human service practitioner will need to utilise tools to help increase feelings of self-competence and client empowerment.

This presentation will look at three scenarios which examine the roles of care giver, broker and teacher. Participants will have a chance to examine what skills they would use today and see various computer software programs which would enhance effectiveness of those skills. Specific computer tools that will be looked at will be those of software for information and referral, for non-directive child therapy and for teaching counselling skills.

North Shore Community College in Beverley, Massachusetts has been successful in utilising these software packages in its Associate Degree Programmes in Human Service Education.

The presentation will conclude with a futuristic view of emerging technological tools such as robotics and interactive video which will become increasingly useful for citizen empowerment.

Guidelines for the Development and Assessment of Human Factors in Software Programs

Stanley L. Witkin

The acceptance and proliferation of computer applications in the human services is dependent, in part, on the ease with which they can be learned and used by the intended users. Programs having a steep learning curve will, under most circumstances, be resisted by users and have limited utility. Similarly, programs that are easy to learn but unwieldy to use will also have a restricted user audience. An understanding of what makes programs easy to learn and use, i.e. human factors, is thus critically important for program developers as well as human services professionals involved in the selection and assessment of software.

While the actual implementation of human factors design depends on technical programming skills, the conceptualisation of human factors issues relative to a particular program requires a knowledge base more akin to that of the social behavioural sciences. Substantively, an understanding of the target user group and knowledge of learning theory, interpersonal communication and cognitive processes are important for the development of successful programs. Methodologically, facility with social research and questionnaire development are important to the assessment of human factors. Thus, human services professionals can (and should) play a greater role in the development and enhancement of software programs designed for their use.

The purpose of this paper is to discuss these human factors issues as they relate to the use of software programs in the human services. Specifically, this paper will discuss general considerations for the design of human factors, methods of assessment of human factors in software programs and guidelines for prospective software developers.

The Application of Information Technology in Social Policy for the Elderly and the Handicapped in Almelo District

Henk J. Woelders

Almelo District is laying in the Eastern part of the Netherlands; it belongs to Twente Region and is a part of Overijssel Prefecture. On January 1, 1987 there are 191,743 inhabitants; 20% of them belong to the 55+ group (11% of these elderly people are over 65 years old). Society life has the characteristics of "urban-agricultural" activities; from 1850 to 1970 Almelo District was identified with textile industry and agricultural activities. But in 1970 there was a completely collapse in textile industry. Unemployment rate is also very high (about 25%). Family life still knows the features of three generations family; family and especially neighbour care in cases of urgency or illness.

Almelo District is also a public administration construction; in 1970 the seven municipalities formed voluntarily this District to be able to co-ordinate activities for economical reasons. But also a lot of attention is paid to the Health and Social Welfare System.

In 1980, Almelo City became involved in the so-called Social Welfare Decentralisation Project; this means that Almelo City Council has been responsible for about 20 tasks of the National Government. The care for the elderly is one of these tasks. In Almelo District, a Board of Aldermen for Health and Social Welfare is responsible for a cohesive policy.

In the process of decision-making there are a lot of participants (most of them belong to non-government organisations; their professional help has been paid by insurance and public fundings), but local government hasn't in fact very much to say. Although every political party has the starting point that on a local level the care for the elderly could be given the best. So, the seven municipalities published in 1982 a report: "To live independent with domiciliary care".

Today, we are talking about the possibilities for a cohesive policy in budgeting, planning, information technology, housing, prevention, technological assessment, epidemiological registration, enslavement and education.

In present policy much attention is given to granting social welfare organisations, and special measures for the elderly and the handicapped (adaptation of their houses/institutional care). What are the possibilities of using a computer in the care for these target-groups?

In Almelo District only one Co-ordinated Care Organisation for the Elderly is using a computer (for registration and planning the visits of 170 volunteers to 2000 elderly people). Also in a project about discharge of the elderly from General District Hospital they are talking about the application of a computer. In September 1987 I could tell more about the present situation and the future policy. One of the questions is how can we use family care to introduce the computer to the elderly, and what kind of self help programs and necessary databanks should be given and developed. There is also a link with the Library Information Project of Almelo City.

"CAC": Computer Assisted Communication

Edward M. Wondoloski

Education through communications technology using a PC and "CAUCUS" a computer conferencing software package, now provides the opportunity for any educator with a PC to host a conference.

Seven groups ranging from between seven to ten students interact with each other in a collaborative fashion for the purpose of creating an information product called "Cultural Smile" (Space Migration for Intelligent Life Extension). This information product is a model that addresses the social, economic and political systems to be employed in space colonisation, for the purpose of closing the gap between the human condition and the human potential.

An HP Vectra PC serves as the host computer for the communications network. Students with modems and PC's of all variations call in the host computer and a traditional delivery system is transformed into a virtual classroom open 24 hours a day, 7 days a week for asynchronous, dynamic interaction of human thought and creativity. The result is a more effective educational process.

This is the first of many experiments planned using this media. The purpose is to reach far beyond electronic mail and computer conferencing, by introducing the student to the experiential dynamics of the "electronic organisation and expert networks". We are at the horseless carriage stage in the development of CAC (Computer Assisted Communication), with chat systems, E-mail, bulletin boards, computer conferencing, all visible and on going in our daily lives. At the threshold, something we have just started to experiment with is the electronic organisation, student expert networks (as distinguished from expert systems), all participating through electronically linked networks with decision support tools and related knowledge bases.

Student reactions to this new media vary, but some responses are; increased motivation; felt more involved; a better learning experience; more student interaction; peer reviews were useful. Much still remains to be learned about this new delivery system along with its psychological effects, but it seems academics and business are both concurrently investigating this new potential for improved interactive communication.

A British Health Service Bulletin Board System

Graham Wright, David McKendrick

The use of electronic communications systems for the education and training of staff is already evident within the British National Health Service. At present there are three main thrusts to this movement. First, internal developments within the service have led to initiatives in the introduction of several systems utilising NHS hardware for information transfer between staff. Major external information systems provided as a national service (Prestel, Telecom Gold, MARIS-NET) appear to have a limited take-up by health care staff,

though in some cases a developing strategy for education of health workers is apparent. A third area is the appearance of a number of bulletin board systems intended primarily for health workers, and introduced by enthusiasts for a variety of reasons.

This paper examines the current stage of development of each area, with particular reference to the orientation and progress of the bulletin board systems. In particular, a comparison is made between the British Viewdata systems and the scrolling terminal bulletin board enhanced by the facilities offered by the International FidoNet system. The experience of Open Software Library in developing a bulletin board system is recounted, and the implications for future growth of electronic information systems relevant to the British health service are discussed.

Computers and Community Organising: Applications and Issues

Alison Cordero

Existence of microcomputers has made it possible for organisers in community based organisations (CBO's) to have access to and use information in ways formerly accessible only to larger, more centralised government and non-profit agencies.

The purpose of this paper is to examine some of the specific uses of computers which have been undertaken by housing organisers in New York City and to identify some of the common issues and problems which have been raised.

This paper is based, first on my experiences, in working at St Nicholas Neighbourhood Preservation Corporation, a 12 year old non-profit community organisation development corporation which works on a variety of housing, development and human service activities in East Williamsburg, a predominantly poor and working class community in Brooklyn, New York. This experience has been supplemented and set in perspectives with information (gathered both from informal personal networking and from interviews) about the experience of organisers in other CBO's working on housing, food and economic development issues in New York City.

Many of the applications for which organisers use computers initially seem to be simply automation of office management, housing management, or other practical functions of the organisations concerned. For example, the automation of correspondence and report writing can be a just time saver, which doesn't fundamentally affect how organisers work. But, when it is combined with the use of computerised mailing lists and publishing capabilities, it begins to change the way organisers communicate. For example, organisers at St Nicholas have been able to target their communications more quickly and easily through specialised mailing lists, phone lists, letters and fliers both to the community and to legislators and public officials. Locally based organisations have been able to more easily and effectively reach a wider audience, both within and outside their communities, through community newspapers like *Greenline* and the *Cypress Hills Gazette*.

Other applications have made use of computers' abilities to store, combine and analyse data in more sophisticated ways.

For example, the development of neighbourhood information databases on microcomputers has enabled organisers to work more effectively on issues ranging from senior housing to arson to distribution of emergency food supplies. These have included both databases of government statistics, which were formerly more difficult to use or analyse, and databases of information on the organisation's own work, such as client intakes or food deliveries which they are now able to compile and analyse more effectively in order to develop, support or challenge plans and policies.

As the use of microcomputers has created some exciting changes and possibilities for organisers, it has also raised some new problems and issues, ranging from practical ones, such as funding and training, to those which are both practical and political, such as problems with access to government agency data. Organisers in New York and elsewhere have begun to address these issues through formal and informal coalitions.

Improving the Quality and Reducing the Cost of Human Services through On-Line Transaction Processing

Martin A. Dukler

The efficiency of human service delivery systems can be greatly improved if the services are treated as a series of transactions, and proven on-line transaction processing methodologies are applied. The cost of delivery can be reduced and delivery management, service utilisation control, access and quality can be improved. A comparison of a public welfare agency's delivery of human services before and after the application of this methodology provides a case study in how to make quantum gains in a number of critical service ingredients.

Administrators of human service agencies are faced with an overabundance of hardware and software options. Ostensibly, all of these are designed to solve their management dilemmas. The technological environment changes frequently, often before the purchased system has been installed. Additionally, investment in capital is necessary to move to on-line transaction processing. Administrators should therefore be aware of the costs and benefits of purchasing processing services on a transactional basis.

The case study explores how a human service agency has applied a technology proven in the banking, manufacturing and transportation industries. The impact of this enhanced management tool has been favourable to all the agency's stakeholders and interest groups. Cost effectiveness and quality of service enhancements have been achieved in each facet of the service addressed.

Students with Computers in the Field

Walter LaMendola

Selected students at the University of Denver have been given portable computers to carry with them and use in Field Placement on an experimental basis over the past three years. The course which directs and supports this effort provides the students with individualised tutoring in this application of the computer to a variety of situations encountered in the field.

One of the most surprising results of the experiment has been the extent to which the use of computers in this course leads to client advocacy and community organisational activities. Students have consistently used computers in this course to resolve problems of client empowerment, whereas in their earlier coursework such applications are a rarity.

In one example, a student working in a partial hospitalisation programme involves the clients of the programme in entering identifying information about themselves that may help to identify them in an emergency. The student goes on to accomplish treatment goals with the clients through their involvement with computer activities and games.

In another case, the student works with illegal immigrants, the very poor and the homeless in an American metropolitan neighbourhood. The student is able to keep track and monitor his own activities and to provide needed services with the support of his portable computer. He designs the programs so that he can pay individualised attention to the people he encounters. For example, one program reminds him of their birthdays.

Another student works with a bewildering number of urban agencies, all interested in helping juveniles in trouble, but none knowing what the other is doing. A well designed database allows the student to do the service planning and demonstrates the efficacy of database technology to planning organisations in the agency community.

Such coursework is a valuable adjunct to a well staged curriculum in information technologies. Students are able to work with a fair amount of independence and to relate the technology to what they perceive are the needs of their clients.

An Introduction to a Problem Solving Method of Teaching Relational Database Design

Walter LaMendola

The principles of database design are not commonsensical and students experience difficulties with the abstract nature of the skills that they require. In this approach to teaching database design, a process of problem solving is used with the students, incorporating skills that they already have and leading them through the necessary steps to master elementary database design.

One of the prerequisites to any successful database design is an analysis of the problem. The next step is the identification of the data model in use within the boundaries of the problem. The data modeling activity is particularly important as the relationships portrayed between and among the data items become translatable to the dependencies in the tuples. The keys become obvious. The jump to the data dictionary phase is then seen as based in the problem analysis. Consequent data definition can be understood as an extension of the representation of the data model in use during the period of modeling. From this step the construction of a primitive prototype is possible.

Social work students are typically skilled in process and human communication. Focusing those skills upon traditional

database problems has interesting consequences. Problem analysis often shows a sensitivity to human communication patterns which is often not a part of designs accomplished by trained data processing personnel. Data models usually reflect informal communication networks as well as power relationships. The integrity of the design is often secure at the transaction, client or bottom level.

All students taking this course are simultaneously in their field placements. The students use problems which they experience in their field placements while they are also in the data design course as the subject of their design effort. The field instructors and agency personnel have shown support for these efforts and have, in some cases, designed the student experience so that the agency would receive technical database design help from the student during their placement.

The course outline and description illustrate the learning that students accomplish during their ten week experience. Samples of the student work is distributed, displayed, and analysed. Common problems which students experience are illustrated and discussed. For example, one of the most difficult concepts for students to master is that of data independence. This concept must be demonstrated by presenting different views of the same data, all derived from normalised tables.

A Confoundment of Meanings: Computer Applications in the Human Services

Walter LaMendola

The author has pointed out in earlier work the problems attendant upon developing software. These problems include the possible confusion between the model of a human process, the interaction of that model with a real event, and the consequent representation of the event by others and to others. An appropriate assessment of the problem would involve the development of a hermeneutic for assessing computer program mediation in the human processes. The principles of such a hermeneutic are suggested here within the context of social work values and ethics. When these principles are applied to software used directly with clients, the author demonstrates the absolute character of the confoundment of meanings they produce. Such a result is not replicated when the rules are applied to software used for some organisational processes or record keeping. It is clear that much more work needs to be done to both clarify the hermeneutic and to distinguish the types of software to which it can be applied.

It is argued that the fundamental problem is probably not machine based nor is it a character of the binary algebra. Instead, it is speculated that the human conception of the machinery and its engineering have placed implied though not necessarily real bounds on the interaction of man with the machine. These bounds have been somewhat altered by the parallel thinking of the Fifth Generation project. But differences will occur in the near future, possibly within the generations of carbon based devices, but certainly when biological substances are used as computing devices and force a holographic approach upon the manner in which

humans design computers and computer programs. A hermeneutic for such a design would ideally be accomplished now and guide the work of designers.

Computers and the Hermeneutics of Human Services

Graham J. Rodwell

The analysis of the limitations and the misuse of computers in the human services has been developed largely by those who retain an belief in their beneficial potential. The problems which they identify are attributed to surmountable factors such as management failure or inadequate software. The philosophical debate generated by research into artificial intelligence, however, suggests an alternative view based on the impact of computers on the hermeneutic dimension. From this perspective, the inherent structure of computers carries a persistent risk of systematic distortions of communication and a loss of meaning in human services irrespective of the efficiency or value basis of software.

This paper develops this line of argument in four parts. The first part describes the hermeneutic dimension of human services. Hermeneutic interpretation is a central feature of all human service work which is based upon the process of reaching an understanding through the reflexive properties of natural language use. The second part argues that computers cannot be used to model this dimension. The process of natural language interpretation must be translated into symbolic manipulation which has the monological structure of a calculation. The third part discusses the communicative deformations that may be promoted when computers short circuit hermeneutic understanding. It is argued that this may promote the anomic effects of bureaucratic abstraction and reinforce the alienating institutionalisation of meanings. Finally, the fourth part considers whether it is possible to expand the contribution of computers in work with people without such communicative distortions. It is suggested that the implications for social organisations go far beyond the need to involve professionals in the design and selection of software. To bring the definition of the categories used for understanding under the permanent control of the worker and client requires new forms of interaction as well as new forms of software.

Human Service on Cable: A Case Study of a Data Retrieval System Designed for Public Access

Laurie F. Ruberg

New Orleans is internationally recognised as a festive, multi-cultural and charming city. However, New Orleans is also a city with much poverty, high unemployment, and a great demand for public and private human service programmes.

This paper represents a case study of a demonstration project based in New Orleans which involves the development and implementation of a unique application of interactive cable technology.

Human Services on Cable Inc. (HSOC) has appropriately named this system "HELFACTS" as it is designed to provide low to moderate income persons with direct access to a city-wide, computerised listing of human services available. Basic facts about such topics as emergency food, clothing, housing, counselling, etc. is presented in concise text with colour and graphic design to enhance the visual appeal of the individual frames of information.

To make the HELFACTS system easily accessible to those in need, 20 viewing centres will be established in low income neighbourhoods and in popular city-wide service facilities. HSOC's long term goal is to make this interactive cable service available to all cable subscribers within the city.

The HELFACTS database housed in a mainframe computer will be capable of immediate updates to maintain accurate and current information. To avoid duplication of effort and to encourage community-wide support for this resource, HSOC recruited human service professionals and representatives of existing information and referral agencies to participate in the planning and goal setting for the development of HELFACTS.

This case study will show how the non-profit corporation initiating this demonstration project dealt with the following issues - Political, Legal, Technical, Financial and Organisational. For example, when changes in the New Orleans franchise agreement no longer required interactive capabilities to be a part of the cable service, HSOC addressed each of the above listed issues in the process of negotiating independent contracts with the local cable operator and a local university to continue this project.

The concluding remarks discuss what other urban communities can learn from this demonstration project.