

New Technology in the Human Services



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Up Front

CTI announce a second national conference

ENITH

This issue

Papers

First year social work students and the impact of information technology: A pilot study

Alun Morgan

Abstract

The number and variety of software applications relevant to social work students have increased substantially in recent years. As a consequence of a generous purchasing policy in the institution the division of social work has been able to bring many of these applications to the students' attention. But the staff are conscious that *more* does not necessarily mean *better*. This study represents an attempt to evaluate the perceived impact of information technology applications and of the teaching methods, from the students' viewpoint. It also offers an evaluation of the philosophy upon which these methods were based. In general the researchers found student responses to be positive, and a useful balance seems to have been achieved between the technical and the academic elements. Results also indicate however that more careful prior screening of skills and greater help with search and retrieval techniques in resource based applications is required.

Introduction

The first year information technology module in the 1995/6 Diploma in Social Work programme was designed with the intention of achieving a synthesis of constructivist and traditional academic learning approaches. The module incorporated the following elements:

1. The early introduction and reinforcement of word processing skills.
2. Social work specific CAL relating to Interpersonal Communications, early in the first semester.
3. The availability of a broad range of resource-based applications on the college network.
4. A lecture sequence relating to the academic context of Information Technology and the Information Society.
5. The introduction of various compulsory and assessable IT related assignments, i.e.: a word processed CV; a CAL workbook; and an academic essay.
6. All IT teaching undertaken by social work lecturing staff.

In recent years the division of social work has been attracted by the ideas relating to 'Social Informatics' (Van Lieshout, 1993), and our IT strategy has essentially been in line with these ideas. The staff have developed a commitment to attempt to diffuse the subject of IT through the total curriculum to help students learn to appreciate and use information more holistically, with the

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assistance of technology. The need however to evaluate the impact of these new resources and methods on the students is appreciated. This pilot study attempts to establish some pointers for future and more systematic evaluation, as the department continues to integrate information technology into other subject areas across the Programme.

The Method for the Study

For the purpose of this study, a structured thirty minute interview was offered to each student in the cohort of 48 first-year students. In total, 35 students from the 48 were successfully interviewed: a response rate of 73%. A questionnaire was administered in the interview and the questions were constructed with the intention of the respondents expressing how IT impacted upon and *felt* for them, in the form of a self-assessment.

The researchers were aware that in terms of the methodology, the questionnaire was administered by staff responsible for the delivery of the Information Technology programme, and that this could potentially have introduced researcher-bias. Some controls were introduced however by the use of standardised questions and the planned management of the interviews. It was decided to accept this potential risk as a trade-off against previous experience of asking students to complete questionnaires, especially those that take more than just a few minutes to complete. Almost always such requests result in very poor rates of response, and in this study the researchers were interested in obtaining as high a response rate as possible. It was suspected that it may be the very students who might not respond whose views were needed to make sure that they were taken into account in the delivery of the teaching programme.

The research design anticipated the need in future to measure *outcomes* more specifically. This pilot-study has only been intended to measure first-impressions. Certainly future studies will need to ensure that non-respondents are given further opportunities to express their views if they wish to do so.

Some Background Philosophy:

Constructivist, or Traditional Academic?

It is clear that Information Technology provides opportunities for new and different kinds of learning. By their sheer capacity for interactivity, suggests Bilson (1995), ‘*information systems... do not provide a model of an independently existing external reality; instead, the actions of those who use them bring forth a reality that is mutually specified by their interactions with the system.*’ Learning in a constructivist model can take place individually, but often it involves groups or pairs learning together (Jones 1995), or the interactive ‘dialogue’ with the software applications themselves. This is qualitatively

different from the more traditional forms of academic endeavour where source data remains static, and where learning is seen as a much more solitary and cerebral endeavour.

The attempt was therefore made to capitalise on the opportunities afforded by the availability of new social work related applications, by constructing a module that hopefully combined the best of both worlds. On the one hand an explicitly *constructivist* Computer Assisted Learning application relating to interpersonal communications was introduced and given a high profile; whilst on the other hand, the traditional lecture presentation with the associated academic essay was retained. In between, was introduced a broad range of applications that essentially represented a ‘resource base.’ Such a resource is neither purely constructivist nor is it traditionally academic, but more a combination of both. Alongside this there was the formal teaching of word processing: a recognition of the fact that there is an irreducible level of skill required in such learning environments. The ability to word process probably represents that minimum requirement.

There would seem to be very few national surveys of models of Information Technology teaching in UK schools of social work. The study by Schweiso & Pettit (1995) is however one exception. The data for this study appears to have been collected some considerable time before publication, so their findings may not now be wholly representative in such a fast-moving area. Nevertheless, Schweiso & Pettit described a tendency for social work students to be taught mainstream commercially available software applications rather than those designed specifically for social work. In such a framework IT was often found to have become marginalised into teaching about *computers* instead of teaching more broadly about the application and management of information in social welfare. In the module, with the exception of word processing, the staff deliberately chose not to teach any of these *mainstream* applications to our first year students, preferring instead the resource-based model outlined above.

<i>Central Position of Resource-Based Applications</i>	
IT INTENSIVE	
Constructivist/Situational	Resource-Based
Traditional Academic	
Limited IT	

Figure 1 Resource Based Model

Which Applications?

The software applications available to the first-year students in 1995/6 are shown in Figure 2.

There were other social work related applications available in the college but which were not introduced to first-year students in 1995/6. These included: *UCM*, the Care Management package from SSRADU, and abstracting and referencing databases such as *PsycLit* (psychology),

Sociofile (sociology), and *BIDS* (on-line sociological). The CAL package *Social Work & IT* was also available but it was decided not to use it for first-year students. *ProCare* was preferred instead, as being potentially more motivating for new recruits. In 1996/7 several self-administered tests will also be introduced, written using *Question Mark* software. In general however applications were excluded on the basis of their subject matter and their related levels. Exclusion was not a reflection on the quality of the programs themselves.

Software Available in 1st Year

Skills based

Word Processing
E-mail

Resource Based

Welfare Benefits
Child Care Law
Youth Justice Law
Newspapers on CD ROM
Child Protection Medical
Child Protection Research
The Internet
Whitaker's CD Index of Books
Library Indexing System
Academic Referencing Databases:
 CareData
 ChildData

Computer Assisted Learning

ProCare (Interpersonal Communication)

Demonstration Only

Keisha
American Sign Language
DataEase (database application)

Figure 2 Software applications for 1st year students

The Teaching Programme

First-year Diploma in Social Work students were offered a total of 22 hours of teaching in the use of Social Work Information and Information Technology. The computer labs were also available for private study at other times during the week, although not at weekends. All of the teaching was provided by social work staff, primarily by one social work tutor who is also a half-time social work practitioner.

The teaching sessions lasted for one hour and took place weekly. After an initial introduction there were four hours of word processing teaching. There then commenced a series of eight sessions using *ProCare*, the Computer Assisted Learning programme for interpersonal communications. *ProCare* was followed by a series of five concurrent sessions of hourly lectures and lab work. In the labs, the cohort of 48 students was divided into two separate groups of 24. The lab work was a brief introduction to the various applications including handouts with basic instructions, and the lectures related to sociological and theoretical IT issues.

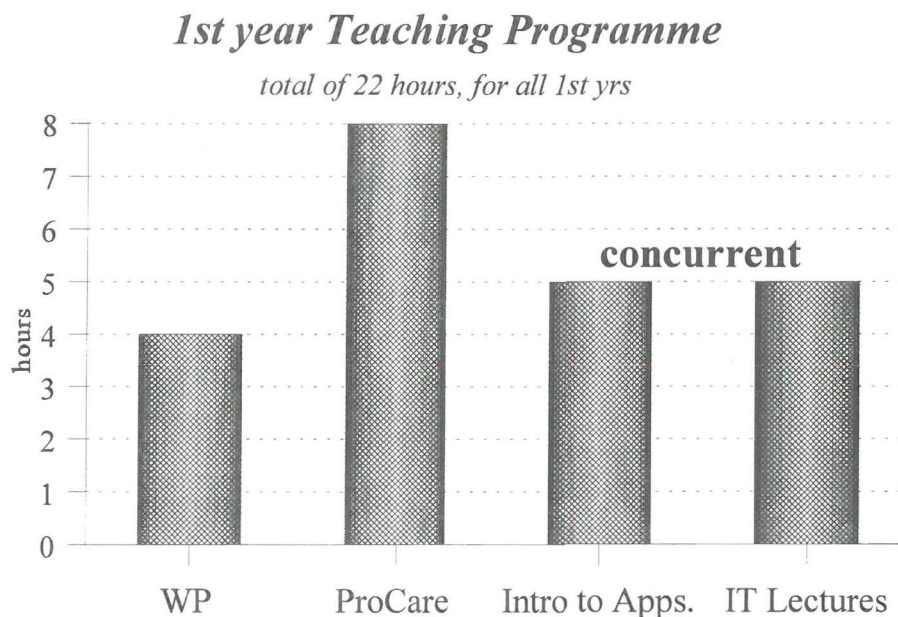


Figure 3: Ist Year Teaching Programme

Some Results from the Study

I. T. Background & Expectations of Respondents:

In addition to the lectures and practical work, each student was required to submit three compulsory assignments: a word processed CV; an individually completed workbook related to *ProCare*; and finally, a one thousand word academic essay on the sociological and practice aspects of Information Technology. In this essay there was a requirement that each student demonstrated their use of the CD academic referencing databases as part of their preparation for completing the assignment.

In general the previous IT experience of the respondents was really quite limited. Almost all respondents who reported previous experience in either school, prior work, or prior adult education, had only gained skills at a superficial level. There were no more than two or three exceptions to this general rule. This evidence is further reflected in the summary of the respondents' expectations of IT on their Diploma in Social Work, prior to commencing the course, (see below):

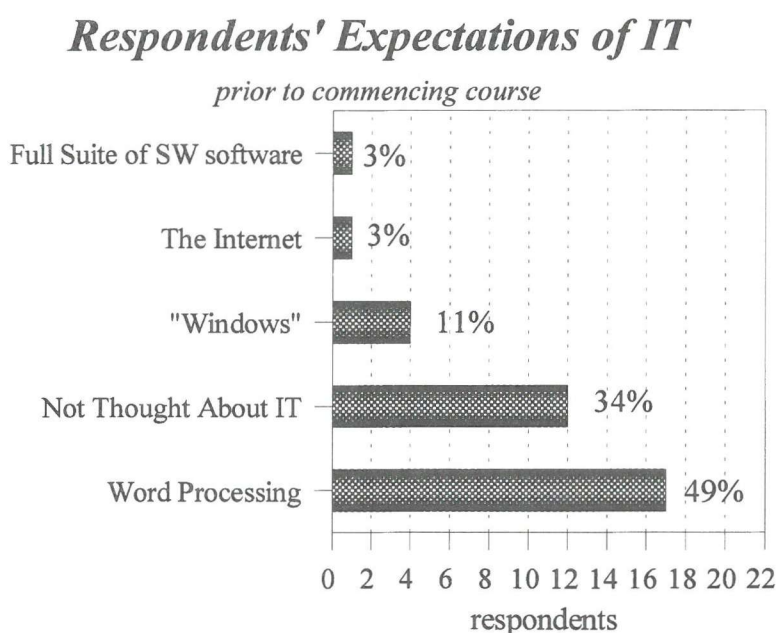


Figure 4: Respondents' expectations of IT

In contrast however, the respondents' motivation to purchase computers increased markedly through their first year. Many students reported purchasing or acquiring computers in the first semester, and by the middle of the second semester at which time the interviews for this study took place, 77% of the respondents reported having a computer at home. Almost half of the respondents (46%), reported having computers at home capable of running *Windows* software.

A large majority, 94% (n=33) of respondents, reported that they were pleased at the possibility of using IT as part of their DipSW course. From this group, 46% (n=15) saw IT as an essential investment for the future, both personally and professionally; 41% (n=13) were pleased to be able to

learn a new skill; and 13% (n=4) were pleased, but reluctant at first.

Student Evaluation of the Available Software:

First year students were asked which applications, made available, they found to be the most useful and enjoyable, and which they found to be the least useful and enjoyable. The figure (below) indicates their responses, grouped by inclusion in the top three or bottom three indicated by the respondents. The original questionnaire separated 'useful' from 'enjoyable'. Regrettably, these were joined together in the final version and therefore missed the opportunity of discerning the possible differences between the two categories.

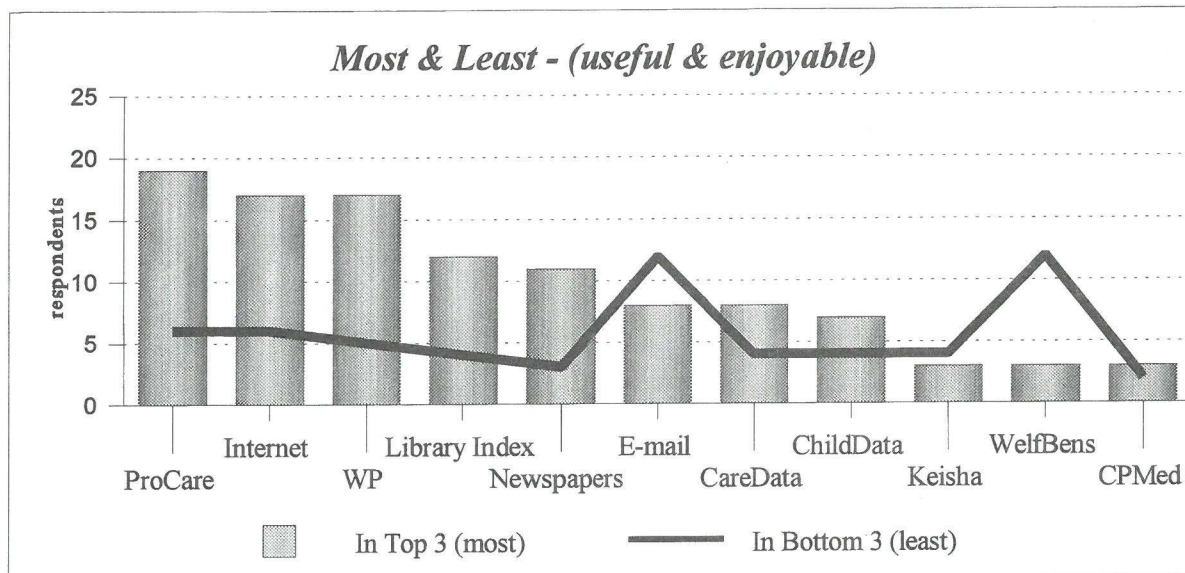


Figure 5: Most & Least (useful and enjoyable)

The respondents were then asked which applications they found to be easy, and which they found difficult. Their responses were as follows:

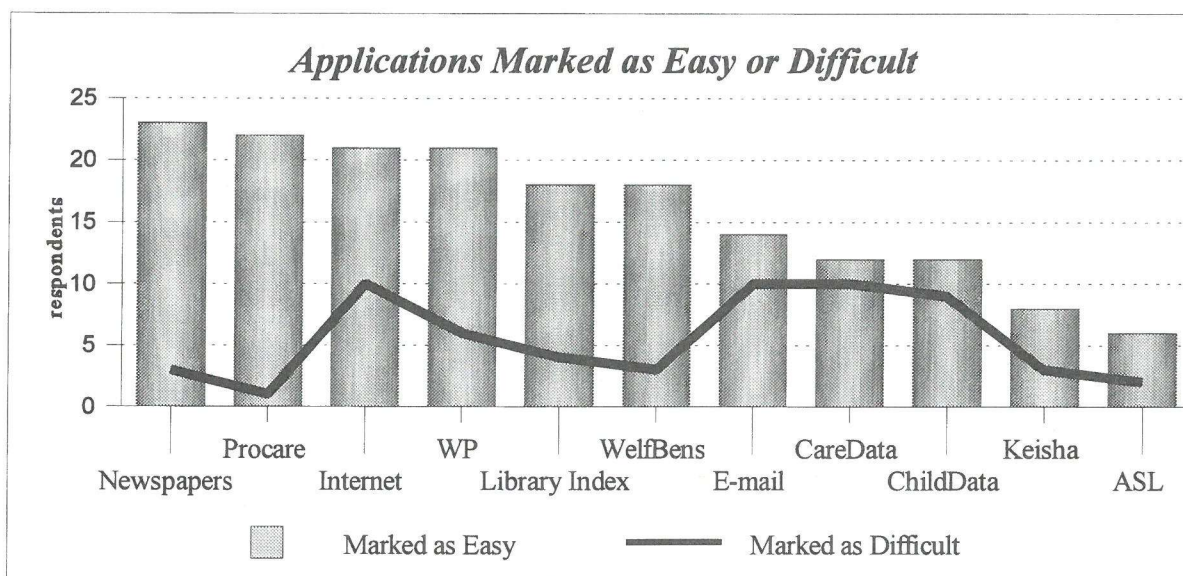


Figure 6: Applications marked as easy or difficult

In addition, supplementary questions were asked about the use of *ProCare* and of the Internet. The format for *ProCare* is divided into two primary areas: factual information, and exercises. For the factual information, 17% (n=6) felt that *ProCare* was fine; a further 17% would have preferred a lecture format rather than CAL; and 60% (n=21), would have preferred the factual information on disks to work on at home. For the exercises in Interpersonal Communication, 20% (n=7) felt

that *ProCare* was fine; 74% (n=26) would have preferred exercises on disks to work on at home, including other exercises from the IPC teaching module. Only 6% (n=2) felt that CAL was not appropriate for use in learning about Interpersonal Communications. Some students did take material home on disk through the duration of the module, but there was no systematic availability of such material at the commencement of the 1995/6 presentation.

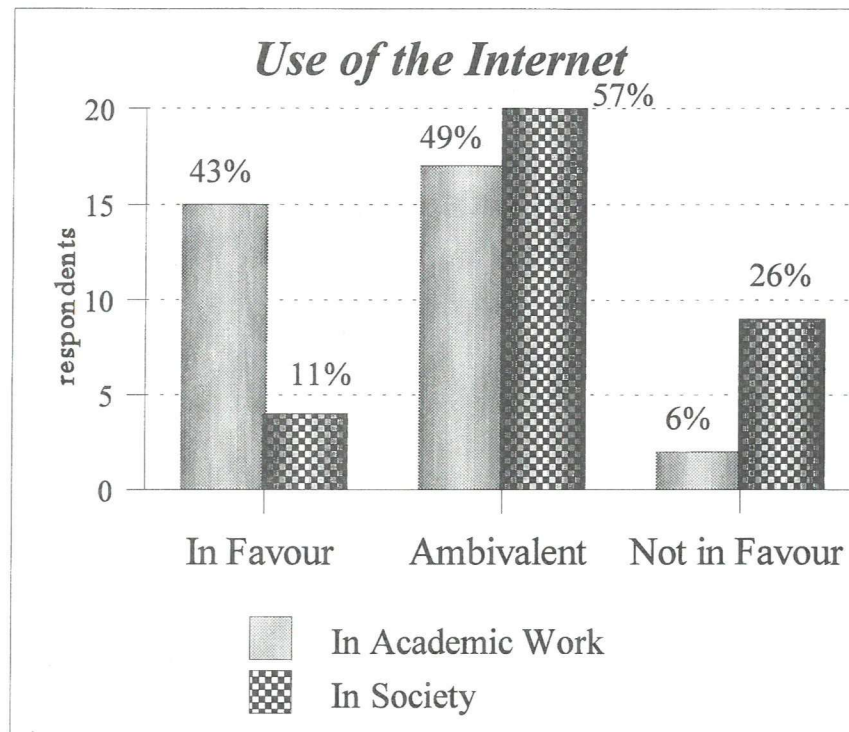


Figure 7: Use of the Internet

As indicated, the respondents were asked separately for their views relating to the use of the Internet in their academic work and in society. Their responses suggest a cautious optimism towards the use of the Internet in their academic work, but more concern was expressed about their perceptions of potential risk from the Internet to society in general. Typical comments in this area often related to fears about unregulated access, particularly by children; or alternatively, concerns about the addictive nature of endless information and the consequent loss of social interaction.

IT in the Learning Process:

The respondents were asked how IT applications had impacted upon them in the learning process in their first year. In response, 3% (n=1) felt that IT might complicate

and impede the learning process. A further 17% (n=6) felt that IT had been useful, but that as a consequence reflective academic work might be more difficult. A much larger group of respondents, 54% (n=19), felt that IT was very useful for factual information, but in using material with many interpersonal elements, IT was felt to be less useful. A further group of 23% (n=8) respondents reported that IT helped in all areas of their academic work.

We asked the respondents for their reaction to the amount of teaching time allocated to Information Technology in their first year. Very few respondents wanted less time allocated, but there was a general view that more time was required on some of the technical aspects of learning the various applications, as indicated in Figure 8:

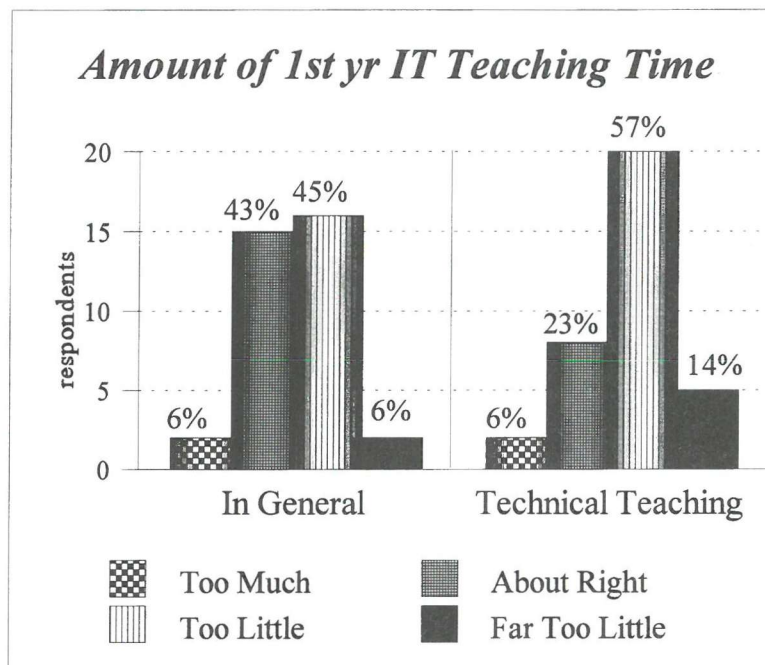


Figure 8: Amount of 1st year teaching time

The respondents were also asked whether they preferred learning IT applications individually, in pairs, or in groups. In reply, 46% (n=16) preferred individual learning, 51% (n=18) preferred learning in pairs, and 3% (n=1) preferred groups.

Before & After:

The students were asked to compare on an imaginary scale of 1 to 10, their attitude towards using IT in their academic work *before* commencing their DipSW course, and their attitude *now*, (i.e. in the middle of the second

semester, following the completion of the IT module). The results are presented below. They demonstrate a substantial increase in positive perceptions during the first year, with only one respondent reporting a decrease in positive attitude.

Finally, an open-ended question was included, seeking any concluding remarks they might wish to make regarding the use of IT in their academic work. The replies were coded under the following headings, and percentages calculated for the number of respondents who commented in the various categories (Figure 10 opposite):

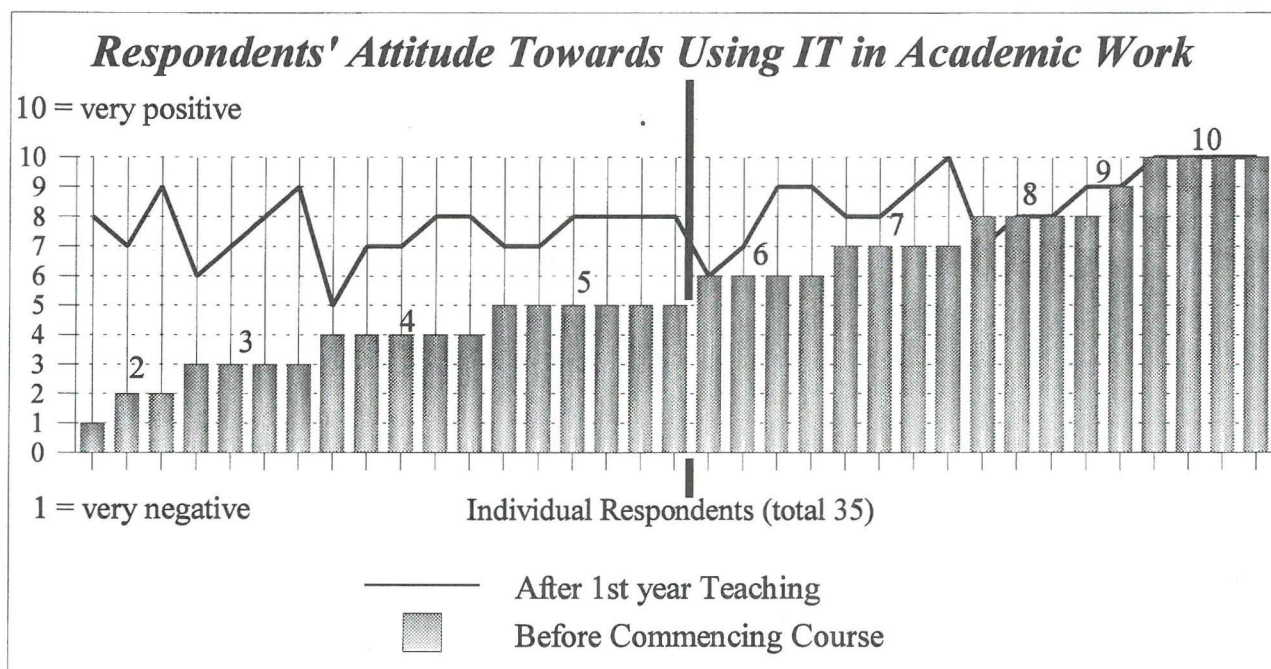


Figure 9: Respondents' attitude towards using IT in academic work

Discussion

It seemed from the responses in this pilot study that the respondents were motivated and pleased to be using information in their academic work. One explanation for the generally positive reception may have been the very juxtaposition of a wide variety of applications, providing rich opportunities for the transferability of skills. In addition, the early placement in the timetable of *ProCare* to which there was attached one of the compulsory assignments, may well have been significant. The placing

of compulsory word processing teaching at the beginning, which correlated very much with a primary pre-conception of what might be available, also seemed understandable and useful to the respondents.

In adult learning terms, *ProCare* appears to have been an excellent application with which to induct novice social work students into the world of information technology. *ProCare* of course is about Interpersonal Communications, a subject of immediate perceived relevance in the first semester. Knowles (1980) suggests

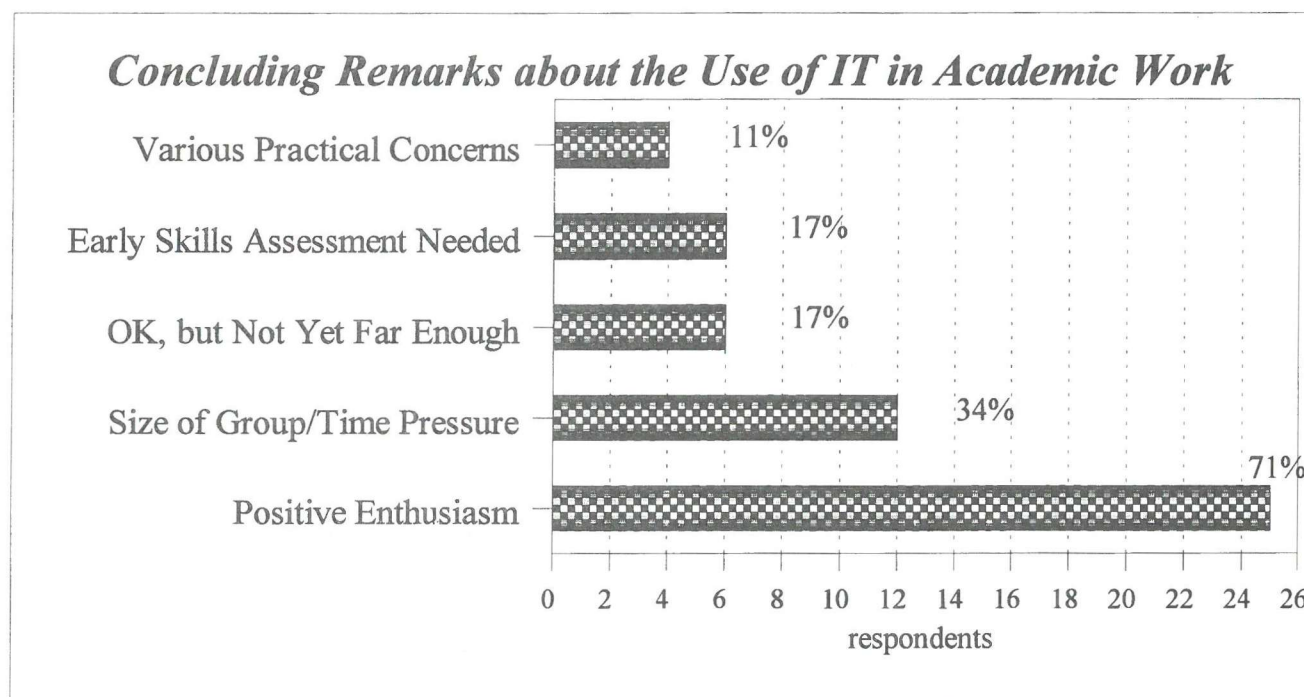


Figure: 10 Concluding remarks about the use if IT in academic work

that for adult learners it is important for life experiences to be included and built upon, and that adult learners are motivated by the potential for the immediate application of skills and knowledge. All students arrive on a Diploma programme with a wide repertoire of interpersonal skills. Therefore to link these with information technology, an area which our respondents clearly regarded as being important, would seem to have been a fruitful association. A good example in this context is the learning of skills and techniques in *Windows*. *ProCare* is very windows intensive, but the *social work specific* subject matter in *ProCare* appeared to be sufficiently engaging that students almost did not notice, or were not troubled by the fact that simultaneously they were learning sophisticated computer skills. Indeed when using *ProCare*, the vast majority of students gained high levels of *Windows* dexterity very quickly, with the minimum of staff assistance. There consequently seemed less need to re-learn such skills in other applications.

Clearly though, respondents indicated that they did require more time spent in learning the technicalities of some of the applications. The need for more specific help was indicated regarding *search & retrieval* techniques in the various resource-based database applications such as *ChildData*, and *CareData*. the teachers probably did not take sufficient account of the views expressed by Taylor & Laurillard (1995), 'that in resource-based learning, it is important to know how to ask the right questions and how to recognise appropriate answers.' Undoubtedly the time allocated for these activities in 1995/6 was not sufficient and will need to be addressed in future.

A further constraining factor was the size of the groups. There was an overwhelming consensus against learning in large groups. This of course is predictable, as Kaye (1995) suggests, 'collaboration in such settings can lead to process loss, lack of initiative, conflict, misunderstandings, and compromise.' On the other hand, many respondents enjoyed collaborating in pairs, suggesting some support

for the possibility that social work students appreciate and are motivated by constructivist learning approaches in the area of information technology.

Ultimately though in an *assessable* environment, the end result of learning must be more an individual than a collective process. In this context the results indicated that much greater care needs to be taken with regard to prior screening of the skills of individuals. It is probably necessary to ensure that pairs and groups comprise a more consistent ability range to maximise the learning opportunities. In 1995/6 no prior screening was undertaken. It is therefore not possible to make a full assessment of the perceived progress of the group of respondents, and in addition make an adequate estimate of the needs or views of the non-respondents to this study. The results however will form a benchmark for the further study of this cohort in their second year.

The lecture sequence for the module was designed to provide some balance to the use of the software applications, and to illustrate symbolically that to conceptualise about IT can involve traditional academic skills. In this we hoped to provide students with the beginnings of the conceptual overview that issues relating to information technology need not always be set in a practical or technical context. In essence, this is the academic process of being *able 'to transcend the particular and transform knowledge into something more generalizable,'* (Laurillard 1993). In the 1995/6 presentation of the module the teachers attempted to retain a balance between the various components by having most of the teaching, both practical and academic, provided by one lecturer. It is likely therefore that the philosophy behind the module design remained largely intact in delivery.

In recognition of the heavy workload in other assessable areas of the course, and of the wish not to unduly overburden the students, a full set of handouts was provided for the lecture sequence. Students were given the instruction that it would not be necessary to seek any other reference or source material in order to complete the assignment successfully, other than to identify one or two references by electronic means from the CD databases. Interestingly, and of course paradoxically, in response to this instruction most students referenced their essays widely, far beyond the scope of the handout material.

In general, respondents' comments reflected that they were more at ease with taking risks in relation to information technology in their personal learning than they were with the possibility of taking risks with the application of information technology in social work, or in society at large. Many respondents commented that the introduction to information technology in college had been empowering for them in their practice placements. For most respondents the level of information technology awareness and availability in their practice agencies, as

evidenced from the questionnaire, was very poor. Nevertheless most respondents commented upon and seemed instinctively to accept, the '*ethical obligation to retain the human element when welfare services are computerised,*' as suggested by Pardeck, et al (1994).

Overall, the comments from the respondents strongly indicated that towards the end of their first year, the majority were looking at the subject of information technology holistically. In a real sense, and perhaps somewhat to the initial surprise and gratification of the researchers, it was found that the respondents were indeed thinking in terms of 'social informatics', and not just in terms of computers.

Conclusion

In the 1995/6 first year module, with the applications chosen, but perhaps particularly with the timetabling of the introductions to the applications, there seemed to be a considerable transferability of skills between the various elements. This seemed especially useful for new students.

The early positioning of *ProCare* in the timetable and the relatively high amount of time devoted to this application seemed very relevant. The fact that *ProCare* is about interpersonal communications and that such a subject is of immediate perceived value to new social work students seemed significant. Attaching a compulsory assignment to *ProCare* also confirmed to students its relative importance.

Many respondents however, whilst generally enthusiastic about information technology were concerned to be more competent in technical skills, and in particular search & retrieval techniques.

There were predictable levels of concern expressed about losing the interpersonal elements in social work by the proliferation of information technology. In contrast though, many respondents were showing high levels of confidence in experimenting with the various applications on offer. They were also conceptualising holistically about the advantages and disadvantages for themselves, and for society at large. This was evidenced by social work tutors at the end of the academic year commenting on a marked increase in the inclusion of reference material located with the assistance of information technology, in essays and presentations across a number of subject areas.

In just twenty two hours of teaching time, the first year students were introduced to a disarmingly large number of new concepts and skills; but more than that, they came face to face with a huge and ever increasing and almost endless supply of *information*. Habermas (1970) suggests that '*the key to productive (social work) intervention is the degree to which a practitioner is communicatively competent.*' The pilot study revealed that the respondents were positively embracing this new method of communication, and they were definitely regarding

information technology as a significant means of enhancing the task of developing their communication skills.

In conclusion, assisted probably by the design of the module, it was found that most respondents had been positively inducted into what for many had formerly appeared to be a very specialised and anxiety-provoking area. It remains to be seen however whether the positive enthusiasm expressed by more than 70% of the respondents at the end of their first year can be sustained over time, or can be consistently measured in academic output and in social work practice. This undoubtedly is a subject for a future and more substantive investigation.

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Where is 'IT' at in UK social services and social work departments?

Colin Barnes

Abstract

128 UK Local Authority agencies administering personal social services in the UK were surveyed at the beginning of 1996 to ascertain how they were deploying Information Technology and Information Systems (IT/S). Over 66% of the agencies replied. Data is presented which shows the changes which have occurred in the deployment of computers for recording data about service users since 1992 and 1993 when two similar surveys were conducted. The results would suggest that over 95% of agencies already register referrals on a computer record but there still remain many plans for increasing the use of IT/S in the future.

Acknowledgements

Thanks to Brian Westcott of the Institute of Local Government Studies at the University of Birmingham for providing copies of the questionnaires used in previous surveys. Thanks to Jean Jeffrey and other members of the Association of Directors of Social Services for evaluating the questionnaire and supporting the survey. Last, but not least, thanks to the staff of the surveyed agencies for their time and effort in responding to the questionnaire.

Background

There are now well established debates at conferences and in journals such as this one about how new technology in welfare organisations should and could be used. However, it is very difficult to establish to what extent (and for which tasks) new technology is actually being deployed. In which places are computers being used most in human service agencies? Are some functions of agencies more likely to be computerised? Do certain applications of technology impact more than others on the efficiency of the welfare organisation using them? Are there places where the rapid introduction of new technology over the last ten years (Steyaert et al. 1996) has been replaced by a less changing environment?

It is easy to be misled by high profile reports of innovative developments occurring in one or two agencies which may not be typical. Similarly, widely publicised failures of computer systems in agencies may create the impression of that the human services are far slower than other enterprises at successfully utilising available technology.

In the UK it is Social Services and Social Work Departments (SS/SWD's) which are the local government agencies which purchase the services required to meet the needs of citizens in need. The development of computer use in SS/SWD's over the years leading up to 1986 was described by Cordingley (1986). Since then there have only been two further attempts to survey the utilisation of technology in SS/SWD's despite there being a considerable increase in the debates about how to make the best use of it.

Every year, the Society of Information Technology Managers (SOCITM) publish a report following their survey concerning the use of Information Technology and Information Systems (IT/S) in the Local Authorities in England, Wales, and Scotland. In 1992 and 1993 they used a supplementary questionnaire which was

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sent to all of the 128 Directors of SS/SWD's. The replies to this questionnaire, when analysed, gave an interesting insight into the way computers were being deployed in SS/SWD's and the proportions of departmental budgets used to support these (SOCITM 1992, 1993). The conclusions were that:

'Social Services departments are now heavily dependent on information technology and expect to develop its use further in the future' and

'Social Service departments recognise the potential of information technology and are committed to its use as a tool for their professional field workers and managers as well as for administrative staff. There is some way to go but an encouraging start has been made.'

Unfortunately, the supplementary questionnaire was not distributed in 1994 and 1995 and so, until the survey which is the subject of this paper, it has not been possible to tell whether most of the trends which were reported upon in 1993 have continued.

Since 1993 and the implementation of the National Health Services and Community Care Act, 1990, UK SS/SWD's have been faced with managing very large budgets with the expectation that they meet the needs of citizens by purchasing a wide range of services from independent agencies whilst still providing most assessment and care management 'in house'. This has led to more information being required especially in respect of financing the costs of meeting individual service users' needs.

In August 1995, Foundation for Information Technology in Local Government (FITLOG) (1995) conducted a survey of Directors of Social Services (England and Wales only) about their attitudes towards IT. This survey did seek some information about the level of IT budgets but, in other respects, did not follow the pattern of questions used by SOCITM and was less about what is actually happening in agencies than about planning for the future.

Methodology

The questionnaire which had been used by SOCITM in 1993 was modified to remove the questions relating to the level of spending on IT which had been asked by FITLOG (1995). The SOCITM surveys had used a single category of 'disabled people' to cover those with a learning difficulty, those with a mental illness, and those with a physical disability. The modified questionnaire separated out these groups as most SS/SWD's now have specialised services which may differ in their usage of IT/S for their records. For similar reasons, this survey gave respondents the opportunity to record a differing level of IT/S activity by occupational therapy staff groups to social work teams.

A question was added about the facilities available for computerised recording of the details of carers as service

users to ascertain how SSD's were responding to a legislative change requiring them to make new services available to this group of citizens.

In other respects, the wording of the questions was not altered so that direct comparisons could be made with the trends found to be occurring between 1992 and 1993. The questionnaire was then submitted to the Association of Directors of Social Services (ADSS) and their agreement for the survey being conducted was obtained. In January 1996 the questionnaire was circulated.

Response

66% of the questionnaires were completed and returned. This is an improvement on both the earlier surveys (1992 - 50%, 1993 - 44%) and also on the FITLOG (1995) survey (54%).

Findings

Computer-based Client Information.

In the 1992 survey, a question had been asked to discover what proportion of the records of users of social services records were computerised and what was expected to be the proportion in 1995. In 1992 three quarters of the SS/SWD's had over 50% of their users' records computerised. Almost all of those who were willing to make a prediction about what their arrangements would be, thought that their records would have been computerised by 1995. Were these predictions correct? The 1996 survey found that, with very few exceptions, basic information is held on a computer record for all groups of service users. The proportion of service users' records which are 'extensive' (e.g. including details of assessments, care plans and comments on cases) has increased by approximately 10% whilst service users in only one or two SS/SWD's do not have a record on a computer.

Comparison with the findings with those of 1993 reveals that there has been a continued increase in computerising records. There are no longer any responding SS/SWD's which had no records of 'children at risk' on computer (there were 10% using only manual records in 1993). The number with 'basic data' on 'children at risk' increased from 38% to 44% and the proportion holding 'extensive' information went up from 52% to 56%.

The client group of 'elderly people' has taken over from children at risk as having the most SS/SWD's recording 'extensive' information about them. This, together with several other findings from the 1996 returns, would indicate that the UK National Health Services and Community Care Act, 1990 (implemented in 1993) appears to have been the driving force behind IT/S developments in the UK over the last three years. The number of authorities without any computerised records about elderly service users has dropped from 5% to 1.19%

(just one of the responding agencies). Several respondents made comment about the problems of managing their IT/S strategy in the context of 'tight budgets' and reduced financial support for IT/S infrastructure from central government despite the continuing demands which had come about as a result of the Community Care Act.

The 1993 survey grouped adults with learning difficulties, those with physical disabilities and adults with mental health problems together under the category 'other clients'. The 1996 survey asked about these three groups of service users separately. The computerised records for all three groups had increased in volume with nearly all SS/SWD's now keeping computerised records for all disabled people. Over 50% of records of people with learning difficulties are 'extensive'. Expectations by the UK central government that registers be kept of people with certain needs is almost certainly a factor likely to increase the transfer to computerised records.

In April 1996 (two months after the survey was conducted) the 'Carers (Recognition and Services) Act, 1995' was implemented and carers are able to ask SSD's to assess them 'independently of the person being cared for'. SS/SWD's were therefore asked a question, not asked in the 1992/3 surveys, about whether SS/SWD's had a computerised record of 'informal carers'. 5.95% already held 'extensive' information (which might include details of assessments etc.) about carers, 54.76% had facilities for 'basic' records but almost 40% had no records of carers on computer. Records for this category of service users are

far less in evidence than for the others about which the survey asked but over half of the responding SS/SWD's had facilities for computerised records for carers. That this was achieved in advance of the legislation being implemented suggests that computer records are now the preferred way of coping with recording needs generated by policy changes.

How is Technology Used in Social Services?

The survey asked SS/SWD's whether they were using (or had plans to use) computers for the following tasks :-

Referrals
Management information
Payments to foster parents
Complaints monitoring
Inspections
Charging for care
Resources monitoring /availability
Care assessments
Providing information on services available
Service planning
Costing care provision
Access to local manuals (e.g. Regulations, Legislation)

The registration of referrals onto a computer record is now almost universal with 95% of SS/SWD's already doing this and the other 5% having plans to do so (compared to 79% logging referral information and 21% planning to do so in 1993).

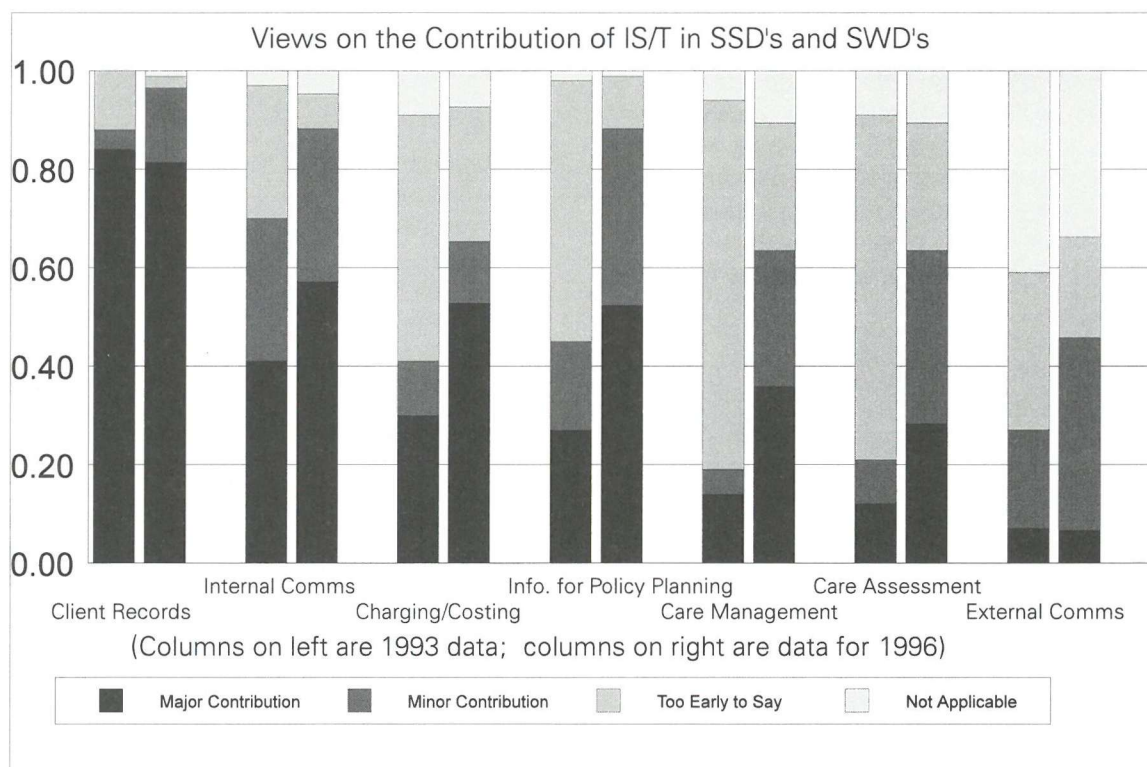


Figure: 1 Comparison between 1993 and 1996 findings.

The UK National Health Service and Community Care Act, 1990, implemented in 1993, has led to 45.24% (compared to 34% in 1993 and only 21% in 1992) of SS/SWD's using computers to help with costing of care packages. There are approximately 20% more SS/SWD's now using computers for other tasks related to 'community care' (logging of assessments, charging for care, inspections and dealing with complaints) than in 1993. Gould (1996) explains, in detail, the links between this legislation and the development of IT/S in UK agencies. It is probably because fewer SS/SWD's have adopted a separation between service purchase and provision in relation to child care services that there has not been an equivalent growth in the use of computers for tasks relating to services to children. The number of SS/SWD's using computers to make payments to foster parents has stayed the same over the last three years.

Management information is now being compiled using computer technology in all but 8.3% of SS/SWD's (and all of these have plans to set up management information systems). The percentage of SS/SWD's using computers to assist in this task has risen from 62.5% in 1992 to 77% in 1993 to 91.76% in 1996. 90% of directors of SS/SWD's in England and Wales responding to a survey by FITLOG (1995) felt that the greatest impact of IT/S had been in improved management information. One respondent to the 1996 survey commented that:

'It would be a lot easier if the Department of Health, Audit Commission and Social Services Inspectorate could agree a consistent data set and give reasonable notice of changes.'

The results of the 1996 survey suggest a trend for SS/SWD's to be more clear about their strategies for how they use IT/S. For example, the number of SS/SWD's who indicated that they have 'no plans' to use computers for the task of holding 'local manuals' and 'resources monitoring' have increased. This suggests that the SS/SWD's have, since the last survey, evaluated the benefits of using computers for these tasks and have now decided that they do **not** want such applications. In 1993 SS/SW's were 'planning' to use applications rather than having a clear idea of whether they were required or not. This increased certainty about whether computers are the best way of carrying out certain tasks would correspond with the FITLOG (1995) finding that, in the year prior to this survey, 89% of directors had an IT/S strategy.

Do Field Workers Use Computer Systems?

Both the 1992 and the 1993 surveys tried to gather information about whether practitioners were using computer records directly or whether making enquiries of and updating the computer record was primarily an administrative task undertaken by clerical staff. However, the text of both reports indicates that the authors of the reports were doubtful about the figures reflecting an

accurate picture of what was really happening. The respondents in the 1993 survey revealed that 96% of SS/SWD's felt their computerised social work records were 'primarily for use by clerical staff'. The equivalent figure in 1996 was 73.1% for social worker's computerised records (65.79% for computerised occupational therapy records and 75.32% for 'other staffs' computerised records'). Although this would suggest that there is a significant move toward practitioners directly using the computers, comments made by respondents indicate that this is an area of rapid change. In some SS/SWD's there were some individual teams who were keeping records on computers whilst their colleagues in neighbouring teams were still using paper records. In some SS/SWD's it was left to local managers to decide whether or not practitioners used computers. The 1996 survey revealed that 23% of social service practitioners were now 'regularly updating the computer record'.

Several respondents annotated their replies to the questionnaire with comments about their difficulties of getting practitioners and managers to 'own the systems' and about the lack of 'computer literacy' among staff. There were comments by respondents expressing their view that training programmes for social services staff should include more computer skills. A survey of Information Technology and Social Work Courses carried out in 1993 reported that IT appears to be marginal to modern social work education despite its potential importance in policy and practice (Schwieso, J & Pettit, P 1995).

There has been very little change in the number of SS/SWD's either using or planning to use 'portable data capture devices' approximately 64% having no such plans in 1996 (nearly the same as in 1993 and 1992). However, of the others, 7% have now realised their plans as compared with only 2% in 1992 and 1993. Additional comments from several of the authorities where these devices are in use would suggest that the deployment of portable data capture by practitioners may only be within certain sections of those SS/SWD's (e.g. home care sections).

Effectiveness of IT/S in SS/SWD's

SS/SWD's were asked their views upon the relative contribution IT/S had upon their organisation. Figure 1 shows the comparisons between the views expressed in 1993 and the findings in the 1996 survey. As in 1993, over 80% of the responding agencies reported that information systems were making a major contribution to the storing of client records. Only 3% felt that IT/S was not making either a major or minor contribution to the way client records were kept. In all six of the other areas asked about, the number of respondents reporting that IT/S was making a 'major' contribution rose. 'External communications' using information technology appears to be only making a small impact on the agencies but over 50% were reporting that the impact on 'internal

communications' was a major one. Several of the additional comments upon the returned forms indicated that 'E-mail' had been introduced and had, in some agencies, 'revolutionised' internal communications and had made a major impact upon the 'information culture' within the agency. Practitioners have always been enthusiastic about advances in communications technology as the widespread use of 'fax' machines in SS/SWD's demonstrates. If computers within agencies 'double up' as additional communication tools it is probable that practitioners will accept them more readily than if they are only used for recording.

Both the 1992 and 1993 surveys reported figures for the 'average response' to the questions about how much IT/S was contributing. This is not a very meaningful set of statistics but I include the 1996 equivalent figures here for completeness. They are:

	Major	Minor	Not Applicable	Too Early to say
1992	39	10	5	46
1993	31	14	10	45
1996	45	28	10	17

Table 1 How much is IT/S contributing?

Regional Variations

The analysis separated out Scottish, Welsh, London Borough, County and Metropolitan District Council SS/SWD's but no major differences were found between these groupings. There did appear to be slightly more IT/S activity (and reported benefits of that activity) in English Counties. This may reflect the higher proportion of the annual departmental budgets spent on IT/S (1.88% in County Councils, 1.45% in Metropolitan Councils, 1.77% in London Boroughs - FITLOG 1995)

Conclusions

The trend towards the increased use of computerised systems for administration within SS/SWD's in the UK continues and has now reached the point that all of the agencies have (or will have, in the very near future) a computerised registration of referrals. The last three years would appear to have been spent implementing systems geared to the preparation of care plans for meeting the community care needs of adults and the commissioning of costed packages of care necessary to meet these needs. Although there have also been developments in respect of the recording of child care data, these seem to have made less impact in the last three years than just after the introduction of the 'Children Act, 1989' legislation for the UK which was implemented in 1990. This corresponds with the finding of the FITLOG (1995) survey where directors of social services most frequently cited 'child

care field social work' as the activity which 'did not exploit IT/S'.

There are signs that practitioners are more involved in 'hands on' use of computers for recording purposes but that the systems in use are still predominantly used by administrative staff rather than professionals. Several respondents reported that there was a need for a 'cultural change' in their organisations for IT/S to be used more productively. There are early indications that a phase of planning to use computers in all aspects of SS/SWD's administration is being replaced by a more 'strategic' outlook with computers being deployed for tasks where they have proved their effectiveness.

Suggestions for future research

If this type of the survey be repeated in the future it is recommended that several changes to those questions asked in this and previous surveys be made so as to gather more useful information. It is now clear that the steady growth of the use of computers for almost all recording tasks is established. Only in new areas of activity (such as the records of 'informal carers' who have become a new category of service users) will future trends be of major importance.

There seems to be no doubt that it is policy developments and legislative change that are now 'driving' the development of IT/S in SS/SWD's. How these policies are benefiting from IT/S might be examined by comparisons in performance between SS/SWD's using advanced IT/S applications and those using rudimentary ones. For example, are SS/SWD's with sophisticated means of monitoring the ethnic origins of service users achieving more equal opportunities for disadvantaged groups of citizens?

In view of the fact that all SS/SWD's will be utilising computer records, the pertinent question now becomes whether the information systems are 'integrated' (as opposed to a set of 'ad hoc' developments). It would seem appropriate to fix an unambiguous definition of what constitutes an 'integrated' client record system and to then survey how many SS/SWD's have a system which meets the standards therein.

Several respondents referred to particular developments which are likely to have a dramatic effect on the 'culture' of their SS/SWD's (e.g. e-mail and 'on line' reporting). A detailed understanding of how rapidly these applications are spreading would be very helpful. Better means of finding out how SS/SWD's are extending the use of computer records to direct use by practitioners are required as the survey approach used here is too 'blunt an instrument' to cope with variations within agencies (and parts of agencies). This would be an ideal subject for some 'in depth' qualitative research.

Perhaps the most serious omission from this and previous surveys about IT/S use is the lack of any measure about the 'quality' of data on the many computer systems which are now deployed. As one respondent put it:

'...the most difficult problem we face is persuading staff of the importance of maintaining up-to-date and accurate data....'

Glastonbury (1995) explains the range of risks inherent in the use of IT/S in social care agencies. Ideally, detailed audits of data quality need to be carried out within individual agencies. Future national surveys might ask what, if any, measures are taken to maintain data quality within SS/SWD's (especially in regard to client record index systems).

Finally, I hope that similar surveys might be undertaken within social services agencies in other parts of the world. Comparisons between European countries would be of particular interest.

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(N.B. copies of the UK legislation mentioned in the text are available from The Stationary Office, London)

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An examination of predictors of computer use by human service workers

Menachem Monnickendam

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Abstract

The prediction of computer use, as distinct from computer acceptance, was studied in the context of the theory of planned behaviour. The theory postulates that attitudes, subjective norms, and perceived behavioural control are effective predictors of behaviour in situations where behaviour is not volitional. Social workers (n=86) in human service agencies who participated in a computerisation project, and social workers in non-participant agencies (n=91) completed a questionnaire that measured (a) attitudes with respect to job performance, ethics, and professional authority, (b) subjective norms with respect to social pressure, and (c) perceived behavioural control with respect to system usability. Hierarchical regression analyses showed that in both groups only system usability was a significant predictor of intended computer use. Implications regarding development and implementation of computers in human services are presented.

An examination of predictors of computer use by human service workers

Lack of computer use by social workers has been a source of concern for more than a decade. Initial reports indicated widespread resistance to computerisation. The computer was accused of impairing professional freedom, ethics and client privacy, and limiting professional discretion, although most of these reports were anecdotal (Hammer & Hile, 1985). In the second half of the eighties the first empirical studies were published and the picture that emerged was vastly different than what was assumed (Gandy & Tepperman, 1990). Social workers attitudes to computers were not negative, and reports of successful computer implementation became available (Monnickendam & Morris, 1989; Mutchler & Cnaan, 1985; Nurius, Hooyman & Nicoll, 1988). Consequently the focus of research changed to investigating factors that effect attitudes toward computers and the association between these attitudes and computer use.

Literature in the fields of psychology and management reported on research of attitudes toward computers and computerisation in a variety of areas. The psychologists focus mainly on personal variables such as computer anxiety (Chu & Spires, 1991; Cohen & Waugh, 1989; Rosen, Sears & Weil, 1993; Torkzadeh & Angulo, 1992), computer alienation (Ray & Minch, 1990), computer phobia (Meier, 1986; Rosen, Sears & Weil, 1987), computer aversion (Meier, 1988; Meier & Lambert, 1991), and general attitudes (Nickel & Pinto, 1986).

Management studies targeted the ways that organisational variables impact on users' attitudes. They evaluated user satisfaction (Gatian, 1994; Lawrence & Low, 1993), user participation (Hornby & Clegg, 1992), user involvement (Tait & Vessey, 1988), and organisational readiness (Johnson et. al, 1978). Social work literature taps into both disciplines and reports on attitudes toward computer efficiency, control over work, and integration in the organisation (Gandy & Tepperman, 1990; Sung, 1982), professional concerns such as confidentiality, ethics and discretion (Monnickendam & Eaglstein, 1993; Mutschler & Hofer,

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1990), and training and education (Nurius, Hooyman & Nicoll, 1988; Weil, Rosen & Sears, 1987). Specifically, some social work research on computer system acceptance suggests that users attitudes, organisational support, system quality, and relevance of data are important determinants of system acceptance. Conversely, other reports indicate that attitudes about professional authority, professionalism, and privacy did not effect system acceptance at all, or only slightly (Gandy & Tepperman, 1990; Monnickendam & Eaglstein, 1993).

Whether accepting attitudes toward computer systems leads to system use (Gandy & Tepperman, 1990) is an open question. Ajzen (1991) reports that attitudes alone are not a predictor of behaviour. In the computer acceptance literature, attitudes are treated as dependent variables, and the psychological or organisational variables as the independent ones. In the psychological and management literature, little has been published on attitude as the independent variable and computer use as the dependent one (Torkzadeh & Angulo, 1992), and not at all in the social work literature. This might be due to the difficulty in operationalising and measuring computer use. For example, which of the following would be an adequate measure: the ratio of cases which are entered in the computer, the ratio of actions that were recorded, the quality and dependability of the data entered, or the uses of the data? A different approach to studying computer use would be through the application of Ajzen's (1991) theory of planned behaviour. He contends, based on an extensive review of the research which applied the theory to a variety of situations, that intentions correlate highly with behaviour. That is: the intention to perform a behaviour, as distinct from attitude toward the behaviour, is a good predictor of the behaviour itself. Thus intended computer use can be utilised as proxy for actual use.

Ajzen and Fishbein (1980), in their theory of reasoned action, stress the distinction between attitude toward an object and behaviour in relation to that object. It may be that although one has negative attitudes toward the computer, one might still use it or vice versa. According to the theory, the immediate antecedent of any behaviour is the intention to perform it. The stronger a person's intention, the greater the likelihood that he or she will act accordingly. Behavioural intention is determined by two independent factors. The first, attitude toward the behaviour, is a personal factor that refers to the degree to which a person has a favourable appraisal of the behaviour. The second predictor of intention, subjective norm, is a social factor that refers to the perceived social pressure to perform the behaviour. Attitudes and norms are assumed to jointly determine behavioural intention.

One of the requirements of the theory is volitional control, i.e., that the person believes that he/she can perform the behaviour (Ajzen & Madden, 1986). In many instances, for example in the case of computer use, this condition is not necessarily met. Practitioners often doubt their ability

to use the computer. Ajzen and Madden (1988) expanded the theory of reasoned action and published the theory of planned behaviour. It deals with situations where behaviour is not completely under volitional control. For these cases they added a third predictor of intention, perceived behavioural control, that is the persons' belief about how easy or difficult performing the behaviour is likely to be (Ajzen & Madden, 1986).

Ajzen (1991) adds that (a) the stronger these three groups of variables, the stronger the individuals intention to perform the behaviour under consideration, and that (b) the relative importance of each predictor is expected to vary across behaviour and situations.

Two common situations are: (a) implementation of a computer system in a human service agency which is familiar to staff, because they were involved in its design and development; and (b) a human service agency which is contemplating implementation of an existing but unfamiliar system.

In line with the research available on computer acceptance one could argue that whereas in the first case social workers can relate to a real system, perceived behavioural control variables like system quality and relevance would be relatively strong. In the second case perceived behavioural control may not be particularly strong as the intended users have relatively little information about the system. Therefore attitudes and norms might be expected to gain importance over perceived behavioural control. On the other hand one can argue that as attitudes about professional authority, professionalism, and privacy almost did not effect system acceptance, in the second case too, perceived behavioural control variables may be most important. The paucity of research in this area prevents us from raising more specific hypotheses. Whatever the case, identification of variables that impact intended computer use and their relative importance would inform implementation efforts in both situations.

The current study applies the theory of planned behaviour to explore whether variables that are considered to indicate system acceptance, like those mentioned above, indeed predict intended use.

Method

Design

This investigation was carried out to identify and assess the behaviour and relative power of predictor variables in relation to intended computer use.

The Israeli Ministry of Labour and Social Affairs initiated an experimental information technology program in a number of municipal social service agencies (MSSA). In these agencies, as in all others, professional social workers

provide direct care services as well as therapeutic and clinical treatment. The MSSA system was designed to be used hands-on by social workers. It includes data pertaining to: client and contact, diagnosis and assessment, and recommendations and decisions. Printed client reports are generated by the social worker when deemed necessary.

A questionnaire measuring subjective norm, attitude toward computer use, perceived behavioural control, and intended computer use was distributed to two groups of social workers. The first group were social workers employed in participant MSSAs (n=86), one month after inaugurating the new system. This group was familiar with the system and required to make use of the computer as part of their work. The second group included social workers employed in non-participant MSSAs (n=91). This group was well aware of the experimental program but had not used nor seen it. At the time they were not using any computer, and it was not known whether the project would be expanded to additional MSSAs.

The comparison of utilisation of a group that was familiar with the system to be implemented and a group which was not, enabled us to investigate whether different patterns of predictor variables would emerge.

We adopted the design generally used in research conducted in the framework of the theory of planned behaviour (Ajzen, 1991). This design involves two steps. In the first, subjective norm and attitude toward the behaviour are regressed with behavioural intent as the dependent variable. In the second step, perceived behavioural control is added to the hierarchical multiple regression equation. The separate treatment of perceived behavioural control makes it possible to assess the relative strength of each predictor in relation to behavioural intentions in situations where behaviour can not be considered completely volitional.

Questionnaire construction

Our first concern was to create measures for the three predictor variables. To that end we searched existing attitudinal human service computer questionnaires for items that measure the predictor variable. The following questionnaires were reviewed: A-victory questionnaire (Byrnes & Johnson, 1981), questionnaire for police detectives (Danziger & Kraemer, 1985), model of system effectiveness in Human Services (Grove, Selto & McCubbrey, 1988-1989), questionnaire on social worker reactions to system implementation (Sung, 1982), the professional's areas of computer resistance (PACR) questionnaire (Sutton, Eller & Schoech, 1983) and the expectation of computerisation (EOC) questionnaire (Monnickendam & Eaglstein, 1993). In addition to the items selected from existing questionnaires, we included items based on the observation of social workers during computer operation. The basis for inclusion in the

questionnaire was whether in the literature the item was deemed as important in system acceptance as outlined above.

Under subjective norm we classified items which indicate perceived normative support of computer use in the MSSA. This included items about perceived organisational and professional support, involvement in development, and importance of computerisation to management and ministry. Attitude toward the behaviour is the degree to which behaviour of social workers in a computerised environment is perceived as being favourable. We included behavioural items in three areas:

- (a) Job performance, i.e., whether job performance in the computerised environment is seen as favourable. This includes items relating to workflow, client progress monitoring, and degree of freedom in decision making;
- (b) Ethics, i.e., whether behaviour in the computerised MSSA is ethically acceptable. This includes items about client confidentiality and client privacy
- (c) Professional authority, which relates to the ability of social workers in the MSSA to work in line with professional standards as perceived by them. This includes items about professional discretion, system imposed therapeutic rigidity, and professional authority. Perceived behavioural control includes variables that depict perceived system usability and quality as indicative of ease of system operation and system relevance. The dependent, behavioural intent variable, includes items about degree of planned and expected routine computer use.

To examine whether our model mediates prominent personal and external influences that might shape intentions (Beale & Manstead, 1991), we added items pertaining to professional background and career and previous exposure to and use of computers.

All items, including those selected from existing questionnaires, were transformed into Likert-type questions with responses ranging from positive (1), to negative (5) reactions. Questions were worded both negatively and positively to prevent acquiescence bias. Items for the participant group were phrased so as to reflect their computer experience. For example: 'To what extent does the computer impair client privacy?' The same item was rephrased for the non-participant group to reflect their expectations of computer use. For example: 'To what extent do you expect the computer to impair client privacy?'. The questionnaire was pre-tested (n=35) on social workers in non-participant MSSAs who were not included in this research.

Confirmatory factor analysis was conducted for each set of items assessing a given construct to form a unidimensional scale. Items which fell outside the factor

structure (below 0.40) were dropped, as were items which if dropped would improve the reliability coefficient. The final questionnaire consisted of thirteen attitude items (six for job performance, three for ethics, four for professional authority), eight items for subjective norm, six items for perceived behavioural control, and three items for intention.

Results

The two groups were comparable in terms of personal attributes and demographics, with no statistically significant differences. All reported demographics are

across groups measures. The mean age was 38. Seventy nine percent had a BSW (in Israel the BSW is the required accreditation degree), and the rest an MSW. Mean tenure in the MSSA was 10 years; seventy six percent of the respondents were female, and only sixteen percent reported prior computer use.

Table 1 presents the reliability coefficients for each set of items designed to assess a given construct. With respect to attitude, four reliability coefficients are presented: One that includes all attitudinal items and three additional ones for each attitudinal sub-construct (job performance, ethics, and professional authority).

	Participant (N=86)	Non-participant (N=91)
Attitude	.73	.74
Attitude, Job Performance	.69	.75
Attitude, Ethics	.74	.77
Attitude, Professional Authority	.77	.68
Subjective norm	.79	.81
Perceived behavioural control	.76	.69
Intention	.77	.81

Table 1 Alpha reliability coefficients

Acceptable reliabilities, ranging from .69 to .81, were obtained for the workers who were participating in the computerisation project and those who were not. By summing the appropriate sets of responses, the seven

indices were computed. Hierarchical regression was used to test the ability of the theoretical constructs, as measured by the indices, to predict intended computer use. The results are presented in table 2.

	Participant (N=86)			Non-participant (N=91)		
	b	R	R ² Change	b	R	R ² Change
Step 1 Theory of reasoned action						
Attitude	-.12			.04		
Subjective norm	.30	.27		.47*	.46*	
Step 2 Theory of planned behaviour						
Attitude	-.22			-.12		
Subjective norm	.05			.25		
Perceived behavioural control	.63*	.61*	.30*	.56*	.67*	.24*

Table 2 Hierarchical regression analyses of attitude, subjective norm, and perceived control for intentions of computer use

Note: b, standardised regression coefficient; R, multiple correlation. R² Change, Increment to R². *Significant regression coefficient (p<.001). The increment in explained variance from Step 1 to Step 2 is significant (p<.001).

For prediction of intended use, attitude and subjective norm were entered on the first step, and perceived behavioural control on the second step. The first step tests the original theory of reasoned action, while the second step tests the expansion to the theory of planned behaviour.

For the participant group, in step one neither the regression coefficient (b) of attitude nor that of subjective norm reached significance. For the non-participant group the results for step one were different. As with the participant group the regression coefficient of attitude did not reach significance. The regression coefficient of subjective norm, however, did significantly contribute to the prediction of intention. The addition of perceived behavioural control at step 2 for the participant group increased the amount of explained variance (change in R²) by 30 percent. With regard to the non-participant group, the addition of perceived behavioural control at step 2 contributed to the prediction of intended computer use over and above the initial contribution of subjective norm. Although in step 1 subjective norm was found to be significantly predictive, when entered in the regression equation together with perceived behavioural control, it lost its significance with perceived behavioural control becoming the sole predictor. The increment in explained variance (change in R²) provided by perceived behavioural control was quite strong, i.e., 24 percent (significant at the .001 level).

The pattern of the results was preserved when we replaced the combined attitude indices with the sub-indices, i.e., job performance, ethics, and professional authority, and repeated the hierarchical regression analysis separately with each one. Finally we established sufficiency of the results. As this theory claims, sufficiency (Beale & Manstead, 1991) perceived behavioural control should predict intentions that go beyond past behaviour and personal attributes (Ajzen & Madden, 1986). Product-moment correlations were computed to determine whether there was any relationship between intentions and demographics. The one significant ($p < .05$) correlation was between intentions and education in the participant group. To test the models sufficiency, demographics were entered on the first step, prior to attitudes, subjective norms and perceived control. None reached significance, and the initial regression results did not change markedly. The robustness of the model was thus supported.

Discussion

Predicting intended computer use

The theory of planned behaviour proved effective in predicting intended computer use. For both groups, powerful and significant results were obtained. Of the three predictor variables proposed by Ajzen (1991), perceived behavioural control is unequivocally the strongest. It was the only predictor which emerged in both

groups. This was inconsistent with the theory which states: 'in any given application ... only one of the predictors ... may be needed' (Ajzen, 1991). Even in the non-participant group, where subjective norm displayed significant predictive power in step one, it was totally overshadowed by perceived behavioural control in step two. Our findings match those of Ajzen in that personal considerations like perceived ease and its reverse, difficulty of performing the behaviour, tend to overshadow the influence of perceived social pressure. We may thus conclude that the most important determinant of intended system use is perceived ease of use.

It appears that with use of the computer, the importance of this predictor becomes even larger. When one compares the sources of social pressure it appears that social workers in both groups were well aware of the importance attached to the project by the ministry and the professional prestige accorded those selected for the pilot implementation. For the participant group however, computer use was also an administrative requirement. It was thus reasonable to expect that for this group too, perceived social pressure would prove to be a significant predictor. Our findings do not sustain this line of reasoning. Instead it seems that as long as notions about the computer are impressions based on hearsay but not on reality, social pressure has some importance. However when the computer is used on a day-to-day bases and one acquires familiarity with it, social pressure is disregarded in relation to intended use.

The influence of perceived behavioural control is also accentuated by the weakness of the attitudinal variables which did not reach significance. As to ethics, our findings support those of Monnickendam & Eaglstein (1993) and Gandy & Tepperman (1990) who reported that professional issues are disregarded by social workers in relation to computer acceptance. Although the social work literature lists professional authority and job performance as determinants of system acceptance (Gandy & Tepperman, 1990; Mutschler & Hoefer, 1990; Sung, 1982), our results strongly indicate that acceptance cannot be equated with intended use.

A central issue which remains to be addressed in future research is whether intended use is indeed a valid measure of real use, as is suggested by the theory of planned behaviour.

The generalisability of our findings is somewhat limited. Subject responses of the participant group may have been influenced by the perceived success or failure of the system. As over time perceptions are affected by use (Olson & Zanna, 1993; Szajna & Scamell, 1993), it might be argued that we explored effects of behaviour on attitudes and not the other way around. On the other hand, as our research was conducted shortly after system implementation, and an official statement as to the success of the system or expansion of the experiment had not yet

been made, this effect most probably was inconsequential. Taking in account that this limitation does not apply to the non-participant group, the similarity of the findings in both groups suggest that this effect did not occur. In any case we need to conduct longitudinal studies to distinguish among such effects (Tait & Vessey, 1988).

Although employee perceptions are generally accepted measures in organisation and implementation research (Aydin & Rice, 1992) it might be that the reality was different than the respondents' perceptions.

Implications

To summarise our findings, perceived behavioural control strongly predicted intended use. Social norms weakly predicted intended use and only when social workers had not been exposed to real computer systems. Attitudes did not predict intended use at all.

As to perceived behavioural control, this study supports the assertion that in relation to system use, technology in itself is less important than the specifics of the man-machine interface, including fit to the organisational culture (Morieux & Sutherland, 1988). Variations in computing have been attributed to the nature of the interface more than to the technology itself (Danziger and Kraemer, 1986).

Developers of software for human services should take into account that its assimilation into the daily routine is first and foremost dependent on its usability. Since usability can be tested only in real life situations, prototyping, as distinct from one step full implementation, should be considered the preferred method of system development for human services.

Implementation of existing systems should take into account the importance attributed to perceived ease of use in the non-participant group. This may indicate that although professional social workers may have opinions about a specific system, they will tend to defer their judgement regarding its use until they use it, preferably in a close to real life situation. In other words, implementation efforts should allow for experimentation by the potential end user. This seems a more promising approach than conducting a series of meetings in which the system is lauded but in which there is no possibility of 'finding out for yourself'.

A final conclusion is that coerced computer implementation will probably be ineffective. That is, social pressure will not induce system use and certainly not sustain it. However, it may also be postulated that even in cases where professional values such as professional ethics and professional authority are compromised, social workers will likely use the computer, provided that it is convenient to use. Social workers should be made aware of these issues as part of social work education and

specifically during computer implementation programs. Thus the involvement of knowledgeable social workers in software development, to prevent misuse of computers in human services, becomes even more important.

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Letter to the Editors

Following the publication of issue 9/3 we received the following communication. We welcome such responses and encourage our readers to enter discussion on this or any other topic which we introduce.

Dear Editors,

Coding and Classification - Two Problems in Social Welfare

While the papers on coding and classification in *New Technology in Human Services* 9(3) raise a number of useful and pertinent points, there are two problems that are insufficiently addressed. The first of these concerns the tendency to adopt medicalised classifications within such systems (Yperen 1996) in the face of increasing evidence from within the disability literature (see for example Barnes 1991, Morris 1992, 1993, Oliver 1990, 1996) that the link between causes of impairment and the experience of disability as a social problem is at the most weak. This, I shall argue, undermines the *raison d'être* for the use of such systems in welfare. The second problem concerns the scale on which these systems are intended to be implemented. Steyaert *et al* (1996) show that internationally there is a common aim towards the standardisation of the ways in which technology is used within social welfare. My current research, into the ways in which social workers in Britain find IT useful, tends to suggest that small scale local initiatives are superior to those developed by agencies. I shall present two examples from my early data collection to illustrate how smaller systems can be more useful to welfare practice.

Technology and the Social Model of Disability

The example given by Yperen (1996) makes use of two sources of classifications which are to be used within a social welfare context. These are the Diagnostic and Statistical Manual of mental disorders (DSM) and the International Classification of Diseases (ICD). He rightly points out that for such systems to be considered highly valid they would need to allow for inferences to be made on resources needed, as well as simply showing the prevalence of certain disorders. It is this point that I feel has not been pursued with sufficient vigour. We need to

look more closely at the underlying assumptions of such classification systems. For this purpose, I want to examine the International Classification of Impairment, Disability and Handicap (ICIDH), also from the World Health Organisation and widely used in relation to disability. This classification forms the basis for much government statistics in many countries and in Britain is used widely by occupational therapists in local authorities to categorise and register disabled people.

As with the DSM and ICD, the ICIDH is likely to be a front-runner for the coding and classification of people as welfare agencies move towards a greater use of technology. The advantages of such systems is obvious when considering the limitations of computers to dealing with highly structured knowledge rather than the looser data contained within an open format of records. The ICIDH is based upon certain definitions that indicate the problems with using them:

- 'Impairment - Any loss or abnormality of psychological components or anatomical structure or function.*
- Disability - Any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being.*
- Handicap - A disadvantage for a given individual, resulting from an impairment or disability, that limits or prevents the fulfilment of a role that is normal, depending on age, sex, social and cultural factors, for that individual.'*
(Quoted in Oliver 1983)

The nature of these definitions is that they start from a concept of loss or abnormality and then proceed to measure disadvantage in terms of how it results from that impairment. What they fail to consider is the extent to which the causes of disability are based within society - the extent to which people with impairments are oppressed and discriminated against. The WHO definitions were rejected by the inaugural meeting of Disabled Peoples

International, a congress of disabled people from over fifty countries, based on an alternative and quite different view of disability, that had been defined by the Union of Physically Impaired Against Segregation:

- 'Impairment - lacking part of or all of a limb, or having a defective limb, organism or mechanism of the body;*
- Disability - the disadvantage or restriction of activity caused by a contemporary social organisation which takes no or little account of people who have physical impairments and thus excludes them from the mainstream of social activities.'* (UPIAS 1976 quoted in Oliver 1990)

Over the past 30 years, the disabled people's movement in Britain and the rest of the world, has grown both in terms of numbers and the degree of sophistication of its arguments for disability to be treated as a social, rather than individual problem. As a result there is now an accumulated evidence base that there is no clear correlation between impairment and social need other than via the ways in which society reacts to such impairments. Morris (1993) shows how such reactions also vary through a range of other factors that have no connection to impairment such as race and sexual orientation while it is clear from a large amount of research (Barnes 1991) that poverty probably causes more social need amongst disabled people than their impairments.

The challenge laid down to social work and other welfare professions for the future is to tackle the actual problems of disability rather than to simply follow a model that assumes them to be individual and medical. This being the case, the use of coding systems based upon convenient, yet inappropriate classifications of diagnoses, will only serve to avoid their intended purpose - that of helping to identify the policy need in the area of social welfare.

Small is Beautiful

While the first criticism of technology might well be used as an argument for abandoning its use altogether, I want to suggest that part of the solution lies in looking at the aspirations for large, all encompassing databases. In their review of technology internationally, Steyaert *et al* (1996) gathered information from Europe, North America, the Far East and Israel. While the development of IT varied considerably between these countries, a common factor amongst those at a more advanced stage was the recognition that individual client information systems were often incompatible and therefore incomparable with each other. Many countries, Canada in particular (MacFadden *et al* 1996), are moving towards a single compatible system of storing information about welfare clients. It is this process, as much as the nature of the data to be stored, that leads to technology being a problem.

Earlier this year, I began a piece of research in which I was interested in finding out how social workers chose to use computers within their work as opposed to how they might be required to use them by their employers. I was interested in finding out the ways in which people with a professional experience of welfare might embrace this new technology to benefit their practice. Although this study is ongoing, there are two examples that I wish to describe to illustrate the advantages of small, not standardised systems. Both these systems have been developed by social workers in positions of first line management, though they are used enthusiastically by practitioners.

The first was developed by John Kemp in St Helens Social Services Department. SAM96 is a *Lotus 1-2-3* spreadsheet for use by care managers in relation to the budgets that were transferred from the Department of Social Security in 1993 under the provisions of the NHS & Community Care Act 1990 (STG). He was requested by his manager to work on this development after realising that there was a simple solution to a problem. That problem was that the Financial Information System (FIS) which the agency relied on for budget management, was not capable of providing the information that would be needed to ensure management of the STG. The FIS was reactive to invoices rather than predictive of commitments which the community care expenditure arrangements required care managers to be. SAM96 allows managers to put in details of expenditure that they have authorised and it then calculates how that will affect the budget for that service over the rest of the financial year. The system tells care managers how many places in independent sector nursing and residential homes they can afford to fund.

One of the interesting features of SAM96 is that it has not been found necessary to change practices to cope with the limitations of the technology. Although the system is accurate in terms of actual commitments, if the time of the year when these commitments are made were to be unusually skewed, it would affect its predictions of remaining expenditure. However, it relies on a measure of faith in the ways in which welfare expenditure has tended to occur in local authorities and over the first 3 years of its use has proved to be reliable. I mention this because I think it is important to show that IT usage does not have to lead to fundamental changes in the ways things are done and can be used effectively to support existing practices. A further benefit of providing care managers with this level of information is that it has led to a greater willingness for districts to partake in the transfer of monies between them. The resources have become visible to all concerned which led to the trust required for this.

The second system was developed by Dave Burchell, a service manager with Somerset Social Services Department in conjunction with Dougal Day, an independent IT consultant. Dave Burchell had responsibility for the Under 8s services in the county as well as a local team of social workers, at the time that the Children Act 1989 was being implemented. One of the

features of this Act was the complex inspection and registration procedures for playgroups, childminders and day nurseries. These procedures require about 30 standard communications to take place between the SSD and the people it was registering in a complex and regimented system. However, if good practice was not to be swamped by these regulations, it would require an extremely smooth administrative system.

The potential for computers to handle this was easily recognised and in fact may have led to the willingness of legislators to develop such procedures in the first place. An internal solution was not available in Somerset, which although having some computerised operations, was committed to a single county wide strategy. The estimated delivery date for developing the county's IT system to undertake this task was 1997. Instead, an alternative solution was sought using a stand alone database.

The Under 8s system uses *Superbase*, a commercially available application, to provide a database that deals with the inspection and registration requirements for playgroups, childminders and day nurseries including the production of about 30 standard letters and the registration certificates. It will provide up to date lists of childminders in any specified area ensuring that childminders themselves are better protected in terms of the Data Protection Act 1984. This means that the whole administrative task can be undertaken by the social worker with responsibility for inspection and registration without any undue encroachment on the ways in which they carry out the professional aspects of those duties.

One of lessons to be learned from this particular application is the potential for hostility from the computer departments of agencies. The Under 8s system has been sold to a number of other SSDs but not to any, where the responsibility for developing a strategy for IT usage has been left with the computing department, rather than the social services. The reports from the marketing of the product are interesting in that they show the differences in power relations in this respect. Some authorities have computer personnel who ask the welfare staff if they would find the application useful and if so, then see their task as one of making it work, while others, the majority, simply say that such systems are incompatible with their grand strategies and dismiss it as having no potential.

In practice, the social workers who use it find it of benefit and time saving. They quickly get accustomed to the Windows environment and find they are able to extend their own use of computers. One user when changing posts asked for a similar system to be developed for managing volunteers and this is also operational.

Conclusions

What these two examples show is that IT has a positive role to play in welfare services though not necessarily on

the basis of large comprehensive databases. It is true that neither of these would provide the type of data that strategic planners seem to believe they need but then it is also true that the data that would be provided through DSM, ICD or ICIDH would not do so either. The quest for standardised classifications tends to lead us away from the purpose of social welfare. Rather than being able to identify the extent of social need, we are likely to end up constructing that need on the basis of codifiable, but irrelevant data. The arguments over whether human need, actions and behaviour can be quantified in the manner that can be used by computers have been well rehearsed in the field of social research methodology. We need to learn from these in relation to new technology and not see computers as the answer to everything. They have a clear role to play but as Lindström (1996) warns, they are often seen as the answer, without anyone knowing the question.

Best wishes

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The Internet as a virtual social work library

Mark Watson

Introduction

Over the past decade information technology has impacted to varying extents in different professions. Unlike social work, the profession of librarianship has for the most part welcomed Information Technology as an enabling technology, freeing many from time-consuming manual procedures:

- software now handles tasks such as book acquisition and processing, loans and reservations in libraries of all sizes - tasks previously carried out manually
- bibliographic and cataloguing details to international standards can be easily obtained in electronic format - reducing the need for in-house cataloguing
- databases offer the opportunity for librarians and for library users to carry out literature searches in a fraction of the time than was possible previously - time that was previously employed in trawling through printed abstracts and indexes to identify literature can now be spent on reading that literature
- on-line and CD-ROM databases offer access to a wealth of information not available locally - libraries can offer access to a collection far greater than that which is contained within its four walls, material which can be obtained either through Inter-Library loan or material which is increasingly accessible on CD-ROM or via the Internet.

This is far removed from librarianship at the turn of the century, when many public libraries were 'closed access' - librarians acting as custodians of the collection, requiring library users to fill in written requests for books and the librarians retrieving the book from the shelves on behalf of the user (a system still in use in archive collections such as the British Library Reading Rooms).

Information and communication technologies, in particular CD-ROM and the Internet, increasingly offer exciting possibilities for accessing 'networked' information on a global scale. Many people refer to the Internet itself as a virtual library, or a global database, putting forward a picture of a wealth of information at the touch of the proverbial button.

Many academic and public libraries are enabling their users to make the most of such opportunities - academic libraries are now expected to provide access to a wide range of databases, as opposed to simply offering an On-Line Public Access Catalogue to their own stock, and public libraries are looking to provide Internet terminals for users, as an alternative to cyber-cafes and pubs.

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And yet, information technology can be seen as a threat to libraries and the library profession as a whole - certainly much more of a threat than to social work. An increasing range of 'search engines', subject guides, 'intelligent' software offering personalised news-feeds, and databases mounted on the World Wide Web (WWW) with user-friendly search interfaces, all aimed at the end-user, could potentially remove the need for information intermediaries such as librarians. With electronic journals and books available digitally either via the Internet or on CD-ROM, the need for library buildings which physically contain material may well be receding.

The term 'Virtual Library' was in fact first used as long ago as 1980 (Harley, 1981), pre-dating the current media fascination with the Internet by over ten years. It is a term that is increasingly used (and mis-used), and one for which there is no agreed definition. In addition to a range of virtual libraries, the Internet also hosts digital libraries, electronic libraries, an Electric Library, and even a Virtual Reality Library.

Searching the Internet via search engines such as *Lycos* and *Yahoo* identifies a range of types of virtual library which fall into a range of categories:

- libraries (primarily academic) who have either telnet access or a WWW interface allowing access to their computerised library catalogue. Whilst they are certainly virtual in the sense that they can be accessed from a remote site, they still predominantly offer a search facility to their stock of traditional printed books and journals.
- co-operative ventures between a number of libraries on a regional or subject basis, presenting a single entry-point and seamless connectivity between different sites to give the impression of a single entity. In the United Kingdom a large number of the 'new' universities are in fact themselves 'virtual' - being a collection of previously separate colleges and polytechnics who remain on their own sites although they now share a single identity.
- subject guides to WWW resources. The World Wide Web Consortium, (w3), who play a leading role in the development of the Internet, have established a high-profile Virtual Library on the World Wide Web. However, the w3 Virtual Library is in fact a collection of subject guides to resources on the Internet - a collection of links to WWW sites. w3 do in fact recognise that the term virtual library is open to confusion by also using the more appropriate, but rather less attractive term 'distributed subject catalogue'.
- co-operative ventures between libraries and publishers. There have been a range of projects in recent years, primarily between university library consortia and

publishers of scientific journals who have been keen to identify barriers and boundaries in the development of a market for electronic publications.

Whilst the Internet offers the means to publish cheaply and to reach a global audience, the extent to which it currently offers a range of resources and services that can truly be claimed to equate to a virtual library is open to debate. An overview of a range of resources and services with respect to social work are outlined below.

Electronic Journals

It is now fifteen years since the first attempts at establishing electronic journals. Experience to date has been that many publishers have approached the Internet and electronic publishing with caution. Commercial publishers see the Internet not as a liberating technology, but as a threatening one - through loss of sales due to copyright abuse, or to an increase in competition from electronic journals, or the threat that the Internet poses to their dominance of the printed medium.

Development in electronic journals have to date concentrated primarily on scientific and scholarly journals, many funded by large national projects - such as:

- Sociological Review
<http://www.socresonline.org.uk/socresonline/> which is part of a £15m eLib (Electronic Libraries) Project.
- Psychiatry On-line
(<http://www.cityscape.co.uk/users/ad88/psych.htm>), offers an alternative model - a low-cost electronic journal, which claims .5m accesses per month and several thousand registered users - a readership far in excess of most scientific journals.

However, the need for academics to publish in peer-reviewed scholarly journals to secure tenure and for professional recognition mitigates against the development of electronic journals, which are seen as an academically inferior product to their printed counterparts.

In addition to journals published solely in electronic format, there are an increasing range of titles which are being dually published - in print and electronically. Many of these are available through password-controlled access to subscribers to the printed version, such as Catchword (<http://www.catchword.co.uk/>) which includes titles such as Carfax's *Disability and Society*.

IDEAL (<http://www.idealibrary.com>) has recently been launched by the Academic Press, making available the full text of a range of their printed journals on a subscription basis to Universities through academic networks. This type of password-controlled access for the UK higher education community was pioneered by BIDS - the Bath Information and Database Services (<http://www.bids.ac.uk/>) which makes a range of

bibliographic databases available to universities on a site licence basis.

More 'mainstream' journals, such as the *British Medical Journal* (<http://www.bmj.com/bmj>) and the *Health Service Journal* (<http://www.hsj.macmillan.com/>), have developed WWW sites which typically make available some editorial material and a limited selection of full text of recent articles - a 'shop-window' approach, aimed at attracting subscriptions to the printed version.

Abstracting/tables of contents

For many years abstracting and indexing services, and Tables of Contents services have offered current awareness services to library users. A number of Internet services of this type have been developed, although perhaps not as many as might be anticipated. Table of Contents services, such as for Child Abuse and Neglect (<http://www.elsevier.nl/>), can be made available quite easily by e-mail. An International Social Work Contents Page Service (<http://www.nisw.org.uk/>) is available by both e-mail and on the WWW, making available the contents pages of a range of social work journals published throughout the world.

The ISI Electronic Library Project (<http://www.isinet.com/>) is designed to provide users with immediate desktop access to the tables of contents, bibliographic data, abstracts, and full images of the approximately 1,350 scholarly journals indexed in Current Contents - Life Sciences. The full text of articles will only be available to subscribers to the service.

The Australian Institute of Family Studies (AIFS) (<http://www.aifs.org.au/>) has mounted a range of bibliographies as part of its National Child Protection Clearing House, and Age Concern England (<http://www.ace.org.uk/>) have a range of bibliographies on a number of topics relating to older people. It is worth noting that both of these organisations have well established Information Services - AIFS have also published Australian Family Resources on CD-ROM, a collection of over 600 documents published by eleven key Australian organisations concerned with the well being of children and families.

Electronic Books

Whilst journals are of a size and structure which are suited to presentation on the WWW, monographs of any length are not suited to the Internet. Whilst the Gutenberg Project (<http://www.w3.org/pub/DataSources/bySubject/Literature/Gutenberg/>) attracted a lot of publicity for making classic (and out of copyright) novels such as Jane Austen's 'Persuasion' available on the Internet it is difficult to see users either reading such lengthy novels on screen, or else printing it out, when copies are available cheaply in bookshops.

A hypertext guide to the Mental Health Act 1983 (<http://www.hyperguide.co.uk/mha/index.htm>) offers a rare example of a resource which exploits the WWW interface, with access to the Act by section and subject and with hypertext links within the text.

The UK Department of Health has recently made available the Hansard transcripts of proceedings in the House of Commons (<http://www.parliament.the-stationery-office.co.uk/pa/cm/cmhansrd.htm>) and House of Lords (<http://www.parliament.the-stationery-office.co.uk/pa/ld/ldhansrd.htm>) - a particularly useful Internet resource which in its printed version is expensive in both terms of cost and of shelf-space.

Newspapers

Whilst the Internet has WWW sites for a range of daily newspapers, such sites typically contain only part of the content of the daily printed versions rather than the entire content ('full text'). The most comprehensive range of full text of newspapers is available through the recently launched NewsEyeQ service, with charges of £20 per month and £2 per item retrieved - somewhat more expensive than an Internet account.

Electronic Document Delivery

For many years the Inter-Library Loan networks which academic and public libraries have developed have in effect formed a virtual library - making any book or journal article published accessible to any library user for a relatively low cost.

The UnCover (<http://www.carl.org/uncover>) service makes available articles from a wide range of journal titles by fax or e-mail (following credit card payment) - a form of Virtual Inter-Library Loan service. Whilst more expensive than traditional Inter-Library Loan, UnCover does offer a 24 hour or faster document supply. The coverage of social work material is limited, although it does make possible a single transaction for a particularly difficult to obtain article, as opposed to having to take out a monthly or annual subscription.

Databases

For many librarians the attention being given to the Internet is quite bemusing as there is a sense of *deja vu*, and of 're-inventing the wheel'. Since the mid-1980s a range of databases have been available 'on-line' at relatively low cost (a pay per record retrieved basis), including:

- NASW Social Work Abstracts (no longer available on-line)
- DHSS-DATA - the UK Department of Health library

- Sociological Abstracts
- PsycInfo
- Applied Social Sciences Index and Abstracts
- Nursing and Allied Health
- Medline

Whilst their search interfaces have not until recently been particularly user-friendly, it is the case that the user can connect to them with an expectation of either finding information on a particular topic quite quickly as the content and method of indexing each database is made clear to the user - a rather different matter to the Internet, where finding useful information is not a simple matter for the novice user.

Many of the databases listed above are now available in CD-ROM format, and an increasing number available solely on CD-ROM. SilverPlatter's Electronic Reference Library (<http://www.silverplatter.com/>) is attempting to utilise both the WWW and CD-ROM to offer a seamless mixture of accessibility of their databases in both formats (including NASW's Social Work Abstracts +, and the American Association of Retired Persons' AgeLine).

The National Institute for Social Work's caredata CD, and the National Children's Bureau's ChildData are only available on CD-ROM, whilst VolNet and the Centre for Policy on Ageing's AgeInfo are both available on CD-ROM and accessible with some restrictions on the WWW (<http://www.unl.ac.uk/>). Caredata CD has begun to add full-text of articles from a range of titles (Social Work in Europe, Care Plan, Research Policy and Planning, Elders), and ChildData contains the full text of articles from Children and Society.

It is crucial to be aware of the range of information resources available through a variety of channels - printed, CD-ROM, and the Internet - and to understand how these relate to each other, to make effective use of them. None provide a fully comprehensive resource, but complement each other.

Catalogues/search engines

The Internet has replaced a range of quite cumbersome text-based tools such as Archie, Veronica, WAIS, gopher with the ubiquitous WWW. Until recently the WWW threatened to standardise access to the Internet in a manner which would have made life a lot easier for most users. However, the waters are being muddied again with developments, often in competition, over Java/Active X, Netscape/Internet Explorer, intranet and extranets.

There are a multiplicity of 'search engines' on the Internet each claiming their own unique service in indexing Internet resources. Hotbot (<http://www.hotbot.com/>) offers a searchable index to every word on over 54 million

WWW pages. However, it frequently requires the use of 'phrase searching' and boolean (AND OR NOT) searching to narrow down the number of retrieved records. Hotbot also offers, quite usefully, the facility to search only material from certain countries - which can reduce the otherwise overwhelming amount of US material.

One of the first search engines, Yahoo (<http://www.yahoo.com/>) has now established country specific search engines, in competition to the likes of the Yellow Pages (<http://www.yell.co.uk/>). However, Yahoo's social work listings are far from comprehensive.

Virtual Librarians - Cybrarians?

There is a key role for librarians to utilise their skills in organising the Internet, and in making use of their experience in searching databases and in evaluating the validity of information retrieved to make cyberspace an easier place for other users. Many subject guides on the Internet have been established by librarians, such as the comprehensive Internet and e-mail Resources on Ageing maintained by Joyce A. Post at the Philadelphia Geriatric Center (<http://www.aoa.dhhs.gov/aoa/pages/jpostlst.html>).

In fact, the Policy Studies Institute some ten years ago exploring the use of Information Technology in Social Services Departments quoted a report: '*A new breed of 'knowledge workers' is being created on the back of the rapid use by companies of on-line databases for crucial business or research information. The professional information brokers act as intermediaries and specialise in economic searches on specialised databases.*' (Forrest & Williams, 1987)

In order for libraries to be used effectively by their users, material has to be identified, collected, organised and signposted. The Virtual Library is no different.

Virtual Library Users

Whilst a minority of IT-literate individuals in the social work field currently make use of the Internet, the majority will rely on an information intermediary to locate and retrieve information for them. The vast majority of social work agencies are unlikely to enable electronic networking amongst their staff as an integral part of their job, one of a range of barriers to take-up by practitioners (Schoech & Smith, 1995)

Usage of the Internet reflects the fact that the academic sector still has an advantage in terms of low cost access, desk-top connections to the Internet, and high-speed connections. For browsing, or grazing for information, or simply surfing to come across items by serendipity, the Internet, both the WWW and e-mail discussion lists suit the academic mind-set and not the practitioner (Berman, 1996).

The Internet is less suited for the practitioner, whose information needs are often of a different type - a sudden need to find out a particular item of information, or to find out who has faced a similar problem. The practitioner wants to get in, search for the information, find it, and get out quickly. And for the irregular user, this is not possible on the Internet.

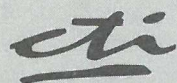
The Future

The resources mentioned in this article are by no means a comprehensive listing, but merely a representative sample aimed at mapping out the type of material currently available electronically. The Internet and CD-ROM databases are still at an early stage of development, and as more individuals and organisations take up these technologies, and as more publishers and information providers take advantage of the opportunities that are offered in exploiting a radically new medium, the picture will change rapidly.

Whether the picture becomes clearer in time, and develops into a truly seamless, one-stop Virtual Library with a wealth of readily accessible resources, remains to be seen.

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Subscriptions to the CTI for non-UK academics

What is the CTI?

The Computers in Teaching Initiative (CTI) was established to promote the use of educational technology in higher education institutions in the UK. There are 24 centres in the UK covering the majority of disciplines. Each Centre is staffed by subject specialists who are experienced teachers in their own right and understand the teaching needs of their subjects. This experience is combined with expertise in computer based learning placing them in a unique position to help transform university teaching and exploit to the full the possibilities offered by information technology.

The CTI Subscription Service offers:

- CTI Centre newsletters and journals
- CTI Centre courseware catalogues (detailing teaching software)
- Copies of CTI conference papers and proceedings (where available)
- Individual responses to queries (on a best endeavour basis)

You may either subscribe to a selection of CTI Centres or to the whole Initiative. The latter is equivalent to 24 individual subscriptions and gives a considerable cost saving.

Subscription charges

£70 per annum per CTI Centre or £1,350 per annum for all CTI Centres. Special rate for Mathematics and Statistics, £100

Contact: either Ann Wilkinson at the CTI Centre for Human Services (address on inside cover) or CTI Support Service, University of Oxford, 13 Banbury Road, Oxford, OX2 6NN, UK

WWW Url <http://info.ox.ac.uk/cti/>

Controversial Issues

Will information technology change the face of social work education and training?

The journal is continuing to highlight issues relevant to the human services which are in the news and this discussion contributed by a social work lecturer and a social services trainer is published in a week in which the following statement was made in the *Times Higher Educational Internet Supplement* in the UK.

'IT to reduce staff by the year 2000, say universities. ...Strategic plans submitted to the Higher Education Funding Council for England reveal that universities expect to replace lecturers with information technology and increase part-time and overseas student numbers and research activity.' (Thomson & Tysome)

Neither of the authors envisages the reduction of teaching staff but they have different views on where technology will be focused. As before the reader is offered the opinions of two professionals writing from different perspectives.

Yes, information technology will change the face of social work education and training?

Neil Ballantyne

'Throughout the world information and communications technologies are generating a new industrial revolution already as significant and far reaching as those of the past...This revolution adds huge new capacities to human intelligence and constitutes a resource which changes the way we work together and the way we live together.' Bangemann (1994)

Imagine this...

Yes, information technology will change the face of social work education and training. But, how? In what way? Forget the virtual university. Forget serried ranks of individual students engaged in earnest interaction with computer courseware. Imagine this... it's all possible now.

Imagine this... a room full of students are working in small groups discussing the text and video of case material just viewed on one of the computers dotted around the room. Text and video material that you, the tutor, created collaboratively with colleagues from a neighbouring teaching institution and placed on your Intranet. They are preparing to email their views on the case to other students on the module discussion list.

Imagine this... you receive an email from a practice teacher enquiring about the input students receive on community development practice. In less than a minute you have forwarded the email to your colleague responsible for that part of the course, and send the practice teacher the URL of the relevant course material on your institutions Intranet.

Imagine this... you are mediating a group of students in a real time computer conferencing session. The students in the group are from Holland, the UK and the US. This is part of an International Perspectives on Social Work module and

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the students are reporting back on a task involving trawling the Internet to visit the sites of social service departments and compare and contrast policy information.

The Drivers of Change

The much hyped information revolution is heralded as changing almost every aspect of our existence from the way we work and learn to the way we consume and socialise. But will the information revolution impact on social work education and training? That a range of powerful drivers of change are converging within higher education cannot be doubted. Political, economic, and social forces are compelling the close examination of the role of information technology in delivering high quality, cost-effective, mass education. Earlier this year the UK Secretary of State for Education established the National Committee of Enquiry into Higher Education, the Dearing Committee, to enquire into UK higher education and to make recommendations about its future over the next twenty years. Whilst the committee will not report on their findings till 1997, the committee chair, Sir Ron Dearing, has already stated

'...if we are thinking in terms of a cost effective expansion of provision beyond advanced level we are going to have to turn fairly swiftly to the potential of information technology as a ...partner in this.'
(Dearing, 1996)

However, are there not equally powerful impediments to change? And do not particular constraints apply in a domain as discursive, value laden and contested as social work?

There are indeed many impediments to the development of new technology in social work education and training. For most of the eleven years since the publication in 1985 of CCETSW's paper 22.1, 'Computer-assisted Learning in Social Work Education and Training' CAL has remained firmly at the margins of the social work curriculum. The obstacles to change have been discussed by Steyaert et al (1996), Hopkins and Columbi (1996) and - in a wider discussion of the integration of courseware into the humanities - by Reid (1994). Most of the obstacles identified are common to other disciplines such as the *technical infrastructure* (e.g. the availability and accessibility of appropriately configured and compatible hardware and software); the *institutional infrastructure* (e.g. lack of enabling organisational frameworks or a strategic approach that provides practical supports and positive incentives to the development of new teaching methods); and *human resource issues* (e.g. a dearth of appropriate training and skills, hostile values and attitudes amongst academic and support staff).

These obstacles are real and help to explain the distance between the promise of technology and what has been delivered to date. However, none of these obstacles are *in principle* insurmountable and many are already in the

process of change and reconstruction. A more serious challenge might be that there are deeper problems in using information technology within social work education; that the learning process in social work education is somehow inherently unsuited to the use of computers.

Hopkins and Columbi (1996) argue that the greatest challenge for information technology within social work education and training is to demonstrate it is as effective as established teaching modes, and can accommodate the fundamentally learner-centred and discursive practices of contemporary social work educators. Clearly, a view of educational technology which emphasises its function in the passive distribution of information will fail this test, but are there alternative perspectives of the role and function of technology in education?

A Conversational Framework

Laurillard (1993) provides a general analytical framework for the application of learning technology in higher education that will not seem entirely alien to social work educators. Her starting point is a definition of University teaching that is not about 'imparting knowledge' but about creating the conditions 'that make learning possible'. Laurillard argues that teaching is essentially a rhetorical process where learners must undertake certain activities in order to learn. She advocates a principled teaching strategy based on a dialogue between teacher and students which she characterises as *discursive, adaptive, interactive* and *reflective*.

A judicious combination of traditional teaching methods - lectures, seminars, tutorials and lab based work (including simulations and role plays) - can address each of these aspects of the learning process, but falling resources and rising student numbers create pressures that mitigate against effective teaching and learning. Laurillard's concern is to argue for the introduction of learning technologies in a way which maintains and improves the quality of the learning experience for students and better meets their learning needs.

Laurillard uses her conversational framework to analyse the contribution of the range of learning media to the learning process - from lectures to multi-media resources, and computer mediated conferencing. She concludes that:

'Stand-alone media-based packages will never be sufficient, because none of the media can adequately support the discursive activities that are essential for academic learning...improvements in university teaching are less likely to come from 'multimedia' than from 'multiple media'.'p.176

The immense value of Laurillard's analysis is twofold: firstly, she offers a coherent framework for the design of courseware that is learner-centred and discursive; and secondly, the conversational framework offers educators

an adaptive blueprint to plan a mix of educational media for student learning, designed around the specific content of their courses and the particular learning needs of their students.

Social Work Education in the New Millennium

In spite of the impediments identified earlier, a growing number of courseware packages have been developed in the last few years - aided by the arrival of the user friendly *Windows* interface, and developer friendly authoring systems. Hopkins and Colombi (1996) identify several examples of simulation and information software used in social work education in the US and the UK. Each of these pieces of courseware offers an exciting and important contribution to the pre-service training of social work students, and the in-service training of social workers.

However, the real impact of new technology in social work education and training may not arise from heavy investment in externally designed courseware - problems of technical incompatibility and the 'not invented here syndrome' are likely to persist. A more probable catalyst for change is the ubiquitous use of electronic networking in the form of email, and the web. The growing use of simple technologies like email are beginning to enculturate social work educators and their students alike to the potential of the digital age.

In addition, the web and web based technologies are emerging as significant educational media. As developmental projects like E-lib¹ begin to resolve the logistical and legal problems of building an electronic library of resources, and as more journals commit themselves to on-line electronic versions, social work educators and their students will find essential learning resources available from their desk top. More importantly, social work educators will realise that their role is not simply as guides to useful sites on the Internet, but that the real power of the web is as a learning technology that can be harnessed for very local educational purposes.

The proactive use of the web as a learning technology will be facilitated by several key technological developments: the increasing use of institutional and inter-institutional Intranets (parts of the network with restricted access thus freeing up bandwidth and protecting intellectual property rights); the development of Metropolitan Area Networks (high bandwidth fibre optic links permitting high speed communications and the delivery of text, audio, and video); and HTML (Hyper Text Mark-up Language) enabled software (enabling educators to transfer material prepared on word processors, or presentation packages or authorware directly onto the web).

Courseware will continue to play an important part in learning technology, and more examples of useful high-end multi-media packages will emerge - perhaps as a result of the Open University's entry into the social work

education market? But the real impact of information technology in social work education will arise from the increasing acceptance and use of email, the web, and Intranets. It is the use of electronic networking in social work education will enable a paradigm shift away from a conception of new technology as a means of distributing information, and towards an understanding of the role of learning technology in supporting *active learning* and *educational dialogue*.

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¹ (Ed note) *eLib* - Electronic Libraries Programme in the UK is funded by the Joint Information Systems Committee (JISC) and was set up following an investigation into how to deal with the pressures on library resources caused by the rapid expansion of student numbers and the world-wide explosion in academic knowledge and information. This investigation resulted in the Follett Report. One of the key conclusions of this report was "The exploitation of IT is essential to create the effective library service of the future". There are a number of projects funded by the Programme and full details may be found on the web pages <http://www.ukoln.ac.uk/elib/>

No, information technology will not change the face of social work education and training?

Yano Rafferty

There are two major elements effecting social work education and training, the first is the continually evolving nature of social work itself, the second, the methods and techniques used in education and training. Social work practice responds to legislation, policy and a growing knowledge base, education and training responds to practice but also to the changing understanding of the best ways to deliver education and training. We are no longer able to ignore the potential of Information Technology. Both Social Work practice and education and training need to take advantage of IT's ability to improve and enhance their delivery. However, I will argue here that it does not have the ability to 'change the face' of either practice or education and training since the essential core elements of both require a high degree and quality of human interaction which cannot be replaced by IT.

Just as the photo-copier and VCR have become normal tools of the teacher/trainer, word-processors and presentation packages have more recently enabled teachers/trainers to improve dramatically the design, quality and flexibility of overheads, hand-outs and other materials. The technology supports the delivery of what already happens by enabling us to control our work and in effect provide learners with small-scale, adapted publications. Courses are booked over e-mail, administration relies on computer systems, we are doing what we already do, but hopefully faster and more efficiently. But as Reid (1994) states this is the first mode of computer use where '*computers are used to do faster and more accurately the things we are already doing*'. In Reid's second mode we '*realise more of the potential of the computer*'... and this enables us '*to change how we do things, to change our methods of solving problems*'. The third mode might constitute changing the face of social work education and training if we were to achieve it, in terms of '*computers enable us to change what we do, to allow questions to be asked which we could not even think of asking before*'. My argument is that we are still a long way from reaching the second mode let alone the third and that it may not be in social work's interest to do so.

To take an example: in the UK the most recent development and change in Social Work with Adults results from the introduction of care management. This change has been in response to the *NHS and Community Care Act 1990* it has not been led by information technology. The Act seeks to provide an approach to social work which is more flexible and responsive to users, involving assessment of need followed by care plan design and delivery. It is the need for more complex information flows to enable this flexibility which has encouraged the use of IT to manage the process. The introduction of Intranets such as the Hantsnet system in Hampshire Social Services; the availability of the law and guidance on-line; the development on assessment and care management systems have all supported the change in working practices. But IT has had a minor impact on the structure and delivery of social work compared to the on-going reorganisation of both practice and education and training which surrounds the introduction of the care management approach. This application of technology is a change in information processing but not in the fundamental nature of social work.

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Even where information systems have been implemented to support changes in practice they have their own pitfalls and dangers which have been well documented in this journal (See Verkaar, 1996, Sapey, 1995). People are attracted to social work because of the focus on human interaction and are often reluctant to engage with information technology solutions to information processing as 'people skills' take priority. This reluctance appears to be framed

in terms of fear of the technology, lack of knowledge about what happens to the information inputted and lack of skill in using a mouse or a keyboard. The result is often social workers who allow the technology to control their actions rather than using the technology to support their work. Social work students and social workers need to be equipped to deal with the issues around information processing whether the process uses IT or not. To improve this situation requires a refocusing of priorities in education and training in what is already a crowded and time and resource limited timetable.

Social work education and training has the key elements of developing practitioner's knowledge, attitudes and skills/practice. In academia, lectures, seminars, reading and tutorials have provided the bedrock of the teaching methodologies with some groupwork and role play where time and space permit. Training within practice has focused more on experiential learning as illustrated in the Kolb Cycle, using groupwork, role play, exercises and participant reflection based on experience.

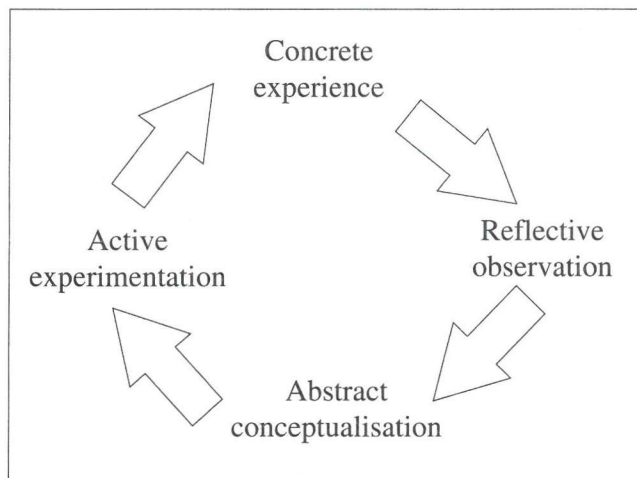


Figure 1 - Cyclical process of experiential learning

Recent attempts to integrate the use of technology with the body of knowledge and skills of social work, e.g. *ProCare* begin to address the issue of balance between academic and experiential methods. Yet we still do not have the computers in enough quantities to enable infrastructure issues not to dominate and very few social work curricula computer based modules.

There are enthusiasts for using computer assisted learning but many see the motivation for using IT to deliver learning as a management driven initiative in order to replace teaching, control costs and productivity rather than to enhance the learning process. The reality is that modules such as *ProCare's* Interpersonal Skills do not attempt to replace all the above methods of teaching and learning, rather it supplements and supports by possibly replacing lectures whilst still relying on role play and groupwork to practice and hone the students attitudes and skills. So although it meets a number of the criteria

required for social work education and training materials it cannot replace the teacher/trainer and its use will be limited in training as the hardware is not in place for students to use. Even if the software and hardware were available it can only supplement what people already do, not replace the human element. Flexibility could be improved in terms of students being able to study the computerised elements where and when they wished but this needs resourcing in terms of time as well as computers and does not in itself change the face of social work education and training.

The commercially available generic software I have reviewed for use in my own training delivery is extremely limited. Packages which deal with stress management, interviewing skills, equal opportunities etc. They cannot mirror what a social work trainer can deliver and although fun initially the format can become tedious and the case examples are often very far from social work. For instance an Equal Opportunity package used in my local authority asks questions about direct and indirect discrimination based on examples such as: 'a clothes shop advertising for a salesman because they need to take male customer's inside leg measurements'. The same issues apply to training videos which are usually targeted at business management and are based on different imperatives than those of social work.

Teachers and trainers design courses for the people they are working with and usually select materials from several sources as well as incorporating their own. Sources which do not allow the teacher/trainer to manipulate what they will use and how it should be used limit the nature of the learning. Such sophistication is available using information technology but not yet within the social work field.

Nevertheless the reality of what is and will soon become available is seductive. The notion of students picking and mixing courses, information and resources from across the globe via the Internet and its interface, the world wide web, provides scenarios of freedom and empowerment but also of confusion, lack of direction and waste of time. It is of course possible for students to meet and share ideas through virtual seminars and 'coffee bars' but this requires a new range of skills from both teachers and students. As Merrick (1996) points out understanding the group dynamics of face-to-face communication is difficult enough, the Internet does not remove this layer of complexity from human interaction so essential to good social work practice, education and training. The educator's role is to know where to find relevant sources and to deliver the resulting information in a way that is interesting, challenging and developmental. The 'web' already provides a severe case of information overload to those who know what they are looking for let alone those who are not sure what the question is or the right keywords to search.

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- ## Rejoinders
- ### Neil Ballantyne
- Much of the difference between our two perspectives centres on our different understandings of the way in which information technology might 'change the face' of social work education and training. In my view learning technology will not, and certainly should not, replace human interaction between tutors and students, or amongst students - both of which are central to the learning process. However, information and communication technologies can extend human interaction: opening up the learning process and enabling new kinds of educational collaboration between the field and the academy. In addition, learning technology can facilitate the learning of facts and theories in a manner more interactive than lectures; offer a richer learning environment; and empower students by supporting new ways of collaborating and communicating within enquiry led projects.
- Like Yano Rafferty I recognise the impediments to change. The sense of hype about technology - its large promises and small realities - is rooted in the disjunction between the transformational rate of change in the capability of

technology, and the much slower, incremental introduction of new technology into social work practice and education. However, new technology *will* continue to seep into social work practice and education, albeit in an incremental fashion - and herein lie dangers and threats. The successful management of change - especially incremental change - requires a sense of direction, a strategic goal, a vision of the future. Without a vision of the possible future of technology within social work education and training, incremental change may take us down an unintended and, in my view, an undesirable road.

It is possible to envision a use of technology within social work education too closely wed to behavioural learning theory, and encapsulated inside a narrow view of competency based training. Centralist and neo-Taylorist trends in social work agencies, and a technological rational perspective within social work education, might combine to support the development and promulgation of computerised models of programmed learning. If this seems a slightly paranoid version of the future, consider Sapey's (1995) findings about the use of technology in community care practice - referred to by Yano Rafferty. All the more reason for social work educators and trainers to develop a vision of the future that embeds technology within a discursive learning framework, and remains committed to the value of social workers as reflective practitioners.

At the time of writing the Scottish Higher Education Funding Council has just informed my department that our collaborative bid for funding with three other social work departments within ClydeNet (the West of Scotland Metropolitan Area Network) has been successful. By 1998, one complete DipSW module, on the Lifespan and Social Networks, will have teaching materials (including articles, digitised video and audio clips) delivered over the MAN. Our intention is to use the technology flexibly and adaptively to support active learning and dialogue. We are committed to a social work education that retains its human face; and to human judgement enhanced by technology, not replaced by it.

Yano Rafferty

I have no doubt that IT can and will develop in ways which will enable social work and social work education and training to deliver a more effective service to their clients. Neil Ballantyne says 'Forget the virtual university' but goes on to describe a possible virtual future that he claims is available now.

The first criticism is where is the service user and student in all of this technology. The piece could almost have been written about educating people in any discipline. If we are talking about education and training for musicians we need to consider what music is about. Despite the possible technological development up to now and of the future - great music is essentially about human beings interacting

and communicating together through the medium of sound. I love electronic sounds and twentieth century music but it really doesn't work where the human interaction element is missing. In the same way social work is essentially about human interaction which cannot be replaced with a computer.

Why do we need to use computer simulations or video-conferencing when essentially the student needs to learn the theory, learn to listen, practice the skills, meet with service users and work with them. Working with people is at the heart of what social work students need to learn. We don't need to worry about finding service users on the Internet there are plenty of them closer at hand if we wish to involve them in our training. Should Neil Ballantyne suggest that that is where we will find the service users in the society of the future, research suggests that these are exactly the people who are least likely to have access to the Internet.

Secondly, Neil Ballantyne needs to consider the limitations of IT - what it can and can't do effectively, when it makes sense to use IT and when not. Conversations take place on e-mail at present which would be much more effective via the telephone. Continuity and nuances of intonation, humour and intention are lost on e-mail how ever many :) symbols are used. Let's individualise and 'technologise' learning to the extent that its beneficial to do so but students also want to learn with and from each other face to face.

Neil Ballantyne also needs to take account of what training and education are essentially about. As a trainer I hope the web can one day supply all the materials I and my students need. But there is an interesting fact about a good trainer and the training packages currently available even in paper form. A good trainer never actually uses the materials available - they pick and choose and modify to suit the students they are working with. They are responsive. And those trainers who pick a pack off the shelf - or slip the disc into the machine - often don't deliver a good training experience and students get bored. The latter is not based on research but on personal experience of twenty years in training and education. I write up all the courses I deliver but I never deliver what I have actually written down because my students are each individuals who need me to respond to them as such. So I must develop some parts and cut others depending on their present knowledge and skill level and their own style and speed of learning. As such I am a very flexible computer.

I'm all for the use of more IT where it benefits service users, social workers, students trainers and teachers to reach their desired goals and I'll happily word process this document, send e-mail, use CAL etc. But let's recognise the reality that the face of social work is essentially human and use IT to help us keep it that way.

Personal Note:

Jan Steyaert the co-editor of this journal is as this journal goes to press preparing to defend his PhD at the University of Antwerp.

'The PhD describes the results of a research into the usage of client information systems and the different dimensions upon which opportunities and threats clash and create the forces that mould the social reality. Do we, 465 years after the first mention of a client index system, have access to an information instrument that provides a platform for a sound information management?

We are sure that the readers of the journal will join the editorial board in congratulating Dr Steyaert in gaining his doctorate.

Review

Iolis

Reviewed by Kathy Whitehead and Dave Giddings

The Law Courseware Consortium, (1996) *Iolis*, Autumn 1996 edition, Law Courseware Consortium, University of Warwick

Iolis consists of computer based learning materials aimed at undergraduate law courses. It was in our role as social work law lecturers that we were approached to review the content of the specific section 'law for non lawyers' which has been developed to meet the needs of those involved in teaching law as part of other degree programmes. The purpose of this review is to establish how *Iolis* might be able to supplement current law teaching on DipSW courses and to assess whether the content is appropriate in terms of the depth and breadth of information which is required of qualifying social workers.

As users of distant learning materials to complement classroom based teaching we are enthusiastic about different ways of supporting student learning, particularly if the given mode offers the student some independence and flexibility in the way they use the materials.

This program relies on the student possessing basic IT knowledge and even with that students will need careful signposting by the lecturer through the program. Availability of computer equipment is an issue which needs to be considered if students are expected to complete particular tasks in preparation for a seminar the following week. Social work courses are increasingly attracting students from a wide variety of backgrounds and therefore with differing levels of skill in relation to IT knowledge. Some students have their own computers, others have only the very basic skills. Therefore in adopting this mode of teaching and learning, lecturers would need to give particular attention to induction, preparation and timetabling

All new users of the program are offered a five minute tutorial which is built into the system to help to familiarise the student and this is supported by an on-line help facility which provides specific instruction on how to use a particular page. This does not negate the need for general training to learn 'how to get started', particularly for technophobic students. All students need to be able to move confidently through the program, using the help facility and the signposts to the appropriate references to encourage further reading in order for the programme to be effective for everyone. After the initial training it should be possible for students, with prior instruction, to use particular workbooks and carry out specific tasks

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The content of the program as it relates to the legal requirements of DipSW courses is not comprehensive. It fails to provide an accurate overview of social work law, yet is very detailed in the coverage of the law relating to Juvenile Justice. This section covers all of the main areas which are relevant to social work and the program enables the student to work logically through various aspects of practice related knowledge. This is supported by relevant articles and legislation in the resource book which enables the student to study the subject in more depth according to their particular need. The Child Care Law is much less comprehensive, focusing on one case study relating to consent to treatment. This does bring in a number of relevant issues, but is very limited in looking at the important issue of Child Protection. Although the Children Act 1989 is fully detailed in the resource book, the other material such as case law may be more relevant to lawyers. There is no information on the law relating to older people, those with a disability or those suffering from mental illness. Therefore if the program were to be used as a standard mode of supplementary study it would need to include all aspects of social work law as it relates to the current DipSW curriculum.

Most social work courses adopt a variety of teaching styles and methods and it would be down to individual lecturers to determine how best *Iolis* could be used. There are several ways in which it could be used to supplement, rather than substitute, teaching. With a more comprehensive set of workbooks covering the whole range of law required for social workers the program could either be a core part of the teaching or it could be used as preparation and consolidation of existing teaching and learning methods. If used in the latter way then students would need assigned tasks from week to week and careful instruction. This could be in the form of a series of questions relating to a given topic asking the students to use the programme and the resource book. If the lecturer decides to use the program as the core of the teaching, then it could also be used as a revision aid. If it is not

adopted by the lecturer in this way then it could still be used as preparation for an assignment and lecturers could incorporate it into their resource list.

All the workbooks available at present are relevant to social work law, but as mentioned previously there are some gaps in the breadth of law covered, particularly in relation to specific service user groups. Lecturers would need to be selective about which workbooks students were directed towards if the work was to relate to a particular teaching activity. They also need to be very familiar with the program themselves in order to provide the students with the instructions they need and to help them to understand how the program relates to the rest of the course.

The interactive nature of the program means that it is interesting to work with as well as informative, although in order to use it to best effect students need to have some basic legal knowledge to begin with.

In a small survey of students their main anxiety was whether they had managed to successfully access all the available information on the 'law for non lawyers' section. This again highlights the need for lecturers to be very familiar with the program and to then be able to offer a list of contents to the students. A number of the distance learning materials currently available are linked to a key text and it is possible that this would provide extra signposting both for the lecturer and the students.

Taking into account the limitations of the breadth of the material covered, the program is appropriate for use on social work courses. The interactive nature of the material makes it interesting and enjoyable to work through. It is difficult to judge how much time it will take a group of students to work through it as so many other factors need to be considered, but what is absolutely clear is that anyone adopting *Iolis* as part of their teaching will have to take account of the need for preparation both for themselves and the student group.

Law Courseware Consortium

Iolis which was reviewed above was developed by the Law Courseware Consortium under the Teaching and Learning Technology Programme (TLTP) funded by the Higher Education Funding Councils in England, Wales and Scotland and the Department of Education in Northern Ireland. The consortium is lead by the University of Warwick and information on purchasing and licensing of this CD-ROM can be obtained from:

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