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Nurses, computers and pre-registration education

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SUMMARY

Nursing informatics, the use of information and technology, to support the work of the nurse, is an essential part of the modern nurses' job. In the UK this is supported by a range of National Health Service policy documents over the past decade, starting with Information for Health in 1998. Research carried out over this period has however found that nurses lack the necessary skills and knowledge to use computers effectively, and that pre-registration education does not fully prepare student nurses for this aspect of the role of the nurse. This paper presents the results of a longitudinal study carried out with a cohort of nursing students, which found that although the students lacked computer skills and knowledge at the start of their programme they were willing to engage with this agenda. Two factors were found to be necessary for students to use the available IT on placement. One was a belief that they had the skills to use the computers; the other was a supportive environment that encouraged their use. Unfortunately only a minority of students reported that they had experienced a supportive environment.

Introduction

Computing policy within the NHS has moved a long way from the management focus of the early 1990's which led to many health professionals becoming disillusioned, seeing no benefit to them, or their patients, in using computers. Ten years ago the UK National Health Service (NHS) launched Information for Health (NHS Executive, 1998) a seminal policy document that signified a major policy change in NHS IT. For the first time the focus moved away from the computer and onto the patient, promoting IT as a tool that could be used to improve both patient care and the patient experience. This approach has been carried through subsequent policy, and is supported most recently in the NHS report High Quality Care for All (Darzi, 2008) which identifies a major role for computer support in a variety of healthcare scenarios.

Background

After the publication of Information for Health (NHS Executive, 1998) a plethora of supporting documents were produced. These can be grouped into two categories: those identifying major government policy initiatives (e.g., DoH, 2002, 2001) and supporting documents that provide guidance on implementing these policies (e.g., NHS Executive, 1999a; NHSIA, 1999, 2002a). There is a high degree of consensus throughout these documents with a wish to see a culture in the NHS that promotes the development and use of health information skills in support of practice.

> '*Information searching techniques, critical appraisal of knowledge, and research will be commonplace activities for healthcare professionals' . . ..Therefore it is clear that all staff involved in delivering modern NHS services require knowledge and competency in health informatics* (NHSIA 2002b p3)'.

An important consideration is that nurses not only need to be competent to support their own work, but that they also need these skills to support patients in a health service that seeks to empower and inform patients.

The implementation documents all place importance on staff being supported to develop the skills that they will need to work within this culture. The exact skills needed are described differently in various documents, but there is a central core, comprising basic computer skills, information handling skills and knowledge of the use of systems that run through them all. These skills, along with the related knowledge base necessary for the effective use of information for practice, comprise the foundations of nursing informatics.

Studies exploring the implementation of Information for Health (NHS Executive, 1998) found that the inclusion of nursing informatics in pre-registration programmes was opportunistic (NHS Executive, 1999b); depended heavily on the Trust where the clinical experience was gained. This was still the position three years later when the NHS Information Authority (NHSIA) carried out a study (NHSIA, 2002a) which found that there was variability in

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the amount and nature of the informatics elements included in education programmes. One issue identified was that whilst many education programmes included elements of the skills and knowledge identified as necessary few of these elements were actually assessed.

In the same year the NHS Information Authority also carried out a survey of the health informatics competency of various staff groups, including nurses, (NHSIA, 2002c). Basic computer skills were found to be generally poor. Around half of all respondents had no skills or knowledge of common office style software other than word processing packages. Although use of email and the Internet was more widespread, 80% did not consider themselves to be competent users.

Two further research projects reviewing the implementation of the standards set out in Learning to Manage Health Information were carried out on behalf of the NHSIA (NHSIA, 2004). These concluded that health informatics standards needed to be more fully integrated into both pre and post registration training. Little evidence was found of integrated development happening between higher education and the NHS, with both having a negative view of the clinical relevance of health informatics and technology within pre-registration programmes.

Both the Nursing and Midwifery Council professional standards for nurses (NMC, 2004) and the UK Higher Education Quality Assurance Agency (QAA) education benchmark statements for both health care professionals generally and for nurses specifically (QAA, 2001) are supportive of the NHS strategy and include a variety of IT skills and knowledge. In spite of this the literature shows that that they were not being included, or at least not successfully included, in pre-registration education.

Research methods, data collection and analysis

A further study into the progress was undertaken as part of a Doctorate of Education programme (Bond, 2006). This was a longitudinal study following a cohort of nursing students at an English university through their pre-registration education to explore their computer skills, attitudes to IT and experiences of using IT on placement.

The data collection was organised in three phases: The first phase, carried out in the first week of the programme, asked the students about their perceptions of their computer skills, and about their ability to carry out basic computer skills (based on the European Computer Driving License). Using statements and likert type scale answers it also explored their attitudes to information technology. The second phase explored their approaches to gathering information, and was carried out at the end of their first term. Both of these phases were based on questionnaires.

The final phase, undertaken during the students' third (final) year investigated their use of information and technology in practice, and it is the results from this phase of the research that provide the main focus of this article.

There were two strands to the research carried out in this final phase. Questionnaires with a mix of open and closed questions were used to collect information from students about their experience of using IT on their placements. Group interviews were held with qualified staff from the students' placement areas to explore the use that qualified nurses, who were the students' role models, made of computers to support their work and professional development. Three semi structured group interviews were held with a total of 15 nurses. One group was senior nurses, each with a different specialist role, and two with general 'ward' based nurses, one group from an acute hospital setting and one with nurses working community based care homes.

Data analysis

Information from the questionnaire was coded, entered into SPSS and analysed using descriptive and non-parametric statistics. Group interviews were recorded and transcribed, the transcriptions were then analysed thematically.

Ethical considerations

Whilst it was unlikely that the researcher would be involved in the students' programme, staffing constraints meant that this possibility could not be excluded over the life of the programme. The effect of a possible power relationship between the researcher and the students was therefore the major ethical consideration in the study. As the students were being followed over the life of the programme data could not be collected anonymously so each student was allocated a number and the data analysed using this rather than names. The only time both were used together was to distribute questionnaires. Students' were assured that their information would be kept confidential, and that individuals would not be identified. Students were also reassured at each stage of data collection that their participation was voluntary and did not affect their progress on their course in any way.

Results

Questionnaires were distributed to the whole cohort of students, in phase one 244 questionnaires were distributed and completed. 60% of this number were returned in phase 3. 92% of respondents were female, and the majority (58%) aged 18–25 (19% were aged 26–35 and 23% over 35). The data collected showed a picture of students who were willing to engage with computers, and who saw the need and value of them in their chosen profession. They lacked skills however and, even more importantly, lacked an awareness of the skills needed by qualified nurses.

The focus of the phase 3 questionnaire was the students' placement experience. Most students (93%) knew where computers were available in their placement sites. 67% ($n = 87$) reported that they saw qualified staff using computers on most shifts, only 2% ($n = 2$) said they did not see them being used at all. Students reported that their own use was lower than qualified staff, with only 21% ($n = 26$) saying that they used them on most shifts and 23% ($n = 18$) not using them at all. The extent to which the student used a computer with their mentor was a significant factor in students' use of computers (chi-sq = 20.684, df = 4, $p < 0.001$) with students who said that they sometimes used the computer with their mentor reporting the greatest use.

In response to an open question about what they saw computers being used for students reported seeing computers being used mainly for administrative tasks. The tasks they reported carrying out themselves were similar to those they reported seeing qualified staff using the computer for. One interesting difference was that students perceived that they used computers more for research and accessing evidence based care information than qualified staff.

Students were asked if they felt encouraged to use computers, and almost half reported that they had not felt at all encouraged. Students were offered an open question to explain their response; two thirds of the comments given were negative, the most frequent comment falling into the theme of not encouraged/no opportunity to use computers. Almost as many students felt that time had been a limiting factor with using the computer being a low priority on a busy ward. Students also perceived qualified staff to have poor skills.

The senior nurses interviewed were users of IT, and were knowledgeable about its use for improving as well as recording