

Educational Implications of Informatics

Major Shashi Bala

The purpose of this paper is to highlight the point that the introduction of computerisation in nursing education can have considerable implications on nursing education and ultimately on quality of care.

What is Informatics?

Informatics, in less esoteric terms, is information technology or computer technology, which is not a new phenomenon. It has been around us since the beginning of time. It entails people communicating with each other, and recording their ideas, thoughts and actions for others to read or hear. In understanding information technology in the modern context, it is important to realize that the electronic computer is only a component in nursing informatics. The term nursing-informatics can be operationally defined as referring to the use of information technologies in relation to any functions that are within the purview of nursing and carried out by nurses in the performance of their duties.

What is Education?

Education is a process for changing the behavior of the students in desired directions. The term 'Behaviour' is used in the broad sense and includes thinking, feeling and acting. When a student is educated and he/she has acquired ideas, habits, attitudes, interests, ways of thinking, and professional skills which he/she did not have before he went to school.

What is the purpose of Nursing Education?

The purpose of nursing education is to prepare the individual for the practice of the profession of nursing (i.e. to practice in clinical field).

What is required?

To make sure that new technology emerges at all levels of the educational ladder, one needs to build a new innovative training programme of education for a profession. The designing of a new programme is not easy but when tackled judiciously, sys-

tematically and enthusiastically, it can be done. How are these challenges met? The answer to this question lies in the improved programme of nursing education, that is, computerised knowledge or computer literacy.

Now is the time that the computer technology should be adopted, adapted and absorbed into virtually every aspect of nursing education to supplement the traditional teaching methods which we have been using since ages. We should provide the student and the educator with a creative, hands-on-interactive tool that can promote efficient learning by thinking, feeling, doing in an individualized way.

How Nursing Informatics effects the education?

In order to appreciate the impact of computer technology in nursing education (both formal and continuing), it is important to understand the learning process itself. Learning should be an active, rather than a passive experience. Students should be given immediate feedback on their progress. Computer-Assisted Learning and Education (CAL & CAE) is yet another major development in the field of computer technology.

The implications of nursing informatics related to the hardware are clear for curriculum planners:

- They must acquire knowledge and understanding of CAL Technology,

- They must learn lesson design techniques appropriate to CAL technology, they must use rational means of selecting appropriate topics for CAL lessons - making CAL instructional strategies to teaching/learning objectives and course content.

- In addition, nursing educators also must monitor continually the new developments in technology.

- Nursing educators must accept the responsibilities of becoming knowledgeable about the use of computers in nursing practice and nursing education to make rational curriculum decision for integrating the Nursing informatics content into Nursing curriculum.

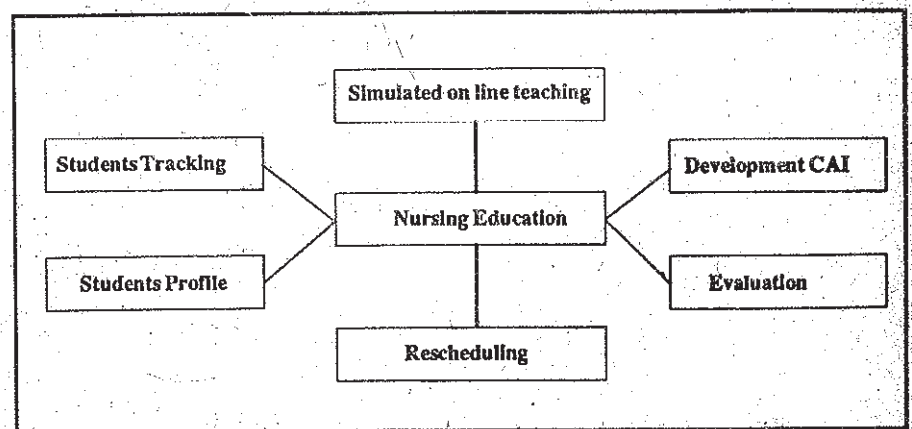
- Take the advice and guidance of experts.

- Curriculum planners must locate instructional materials, evaluate their utility and use them to support the teaching of nursing informatics.

- Finally they must accept the responsibilities to be proactive in the anticipation of the need to prepare graduates who are discriminating users of information, not hampered by the technology.

How can CAL Technique be effectively used to enhance teaching?

Educational software consists of programme designed to teach a skill. The skill may be a general improvement in analytic abilities or can cover a specific body of



Use of Computer in Education and Training

The author is RPO, Dte. Gen. of Med. Services (Army), New Delhi.

knowledge. Use of this technology ensures that proper training is imparted to each individual to develop her skill required for the job. Since training is imparted through a video screen, where the trainee remains in physical contact with a computer system, the learning is more effective. Teachers' capabilities, personal moods and attitudes are no longer a constraint. This does not mean that classroom and clinical experience are not longer required, but these are supplemented by CAL & CAE.

A primary implication of CAL is to provide an automated means for individualized student instruction while serving large number of students simultaneously. The computer acts as a tutor, a self evaluator and a source of enrichment of the learner while maintaining user control over the process of learning.

The computer also plays a supervisory role, reviewing areas where the student's knowledge is weak, and directing the student to supplementary learning material covering the areas of demonstrated weakness.

The design of CAL system is based on discovery-teaching logic. This logic allows the user to learn individual learning style. CAL utilizes a modular instructional design, divided into lessons or exercises. If the learner makes an error the computer will respond with a message and allow the user to stop over and try until the correct response is reached.

- The Instructor can present the same material to every one without tiring repetitive lectures.

- Courses can be standardised

- Decision-making can be taught by using simulation.

How can CAL Technique be used to enhance learning?

- It allows the learner to be independent and self-directed

- The lessons are individualised and self paced instruction. This way students can proceed at their own pace and repeat the lesson over as many times as necessary and to test their own learning.

- The learner is forced to actively participate.

- There is immediate feedback to the learner

- The instructors are available to help the learners while they are using CAI (It also provides human interaction as well as com-

puter interaction).

- It provides stimulating and multi-sensory learning environment which is supportive of teaching.

In which other areas of Nursing Education the Computer can be utilised?

The Ohio State University at Columbus offers an independent study programme (ISP). The ISP covers the educational material as the lecture discussion programmes, but allows the students independently to determine their rate of progress. The ISP consists of two segments of 'normal man', which can be completed in about six months, after a student has taken a lesson and test in microbiology. The programme gives the assessment.

The major advantages of CAL is the capability of the computer to evaluate individual and group performance. The system generates reports regarding the objectives and skills that individual students have not mastered. Say 56% students in a class missed the objective 19 in Unit B. The problem could be that the question was not worded correctly.

For testing students, question bank can be organised by way of setting questions.

The author can tell the system to supply questions as per objectives and level. The effectiveness of the questions is tested by means of correct responses, difficulty index, high and low group response patterns.

How it can be incorporated in Curriculum?

Computer literacy in nursing education as the world moves out of the industrial era and into the technological era, nursing educators are beginning to realize that it has become a survival skill for the profession in the use of hospital computer. However, to do this, one must be knowledgeable about computer system and its applicability to Nursing profession.

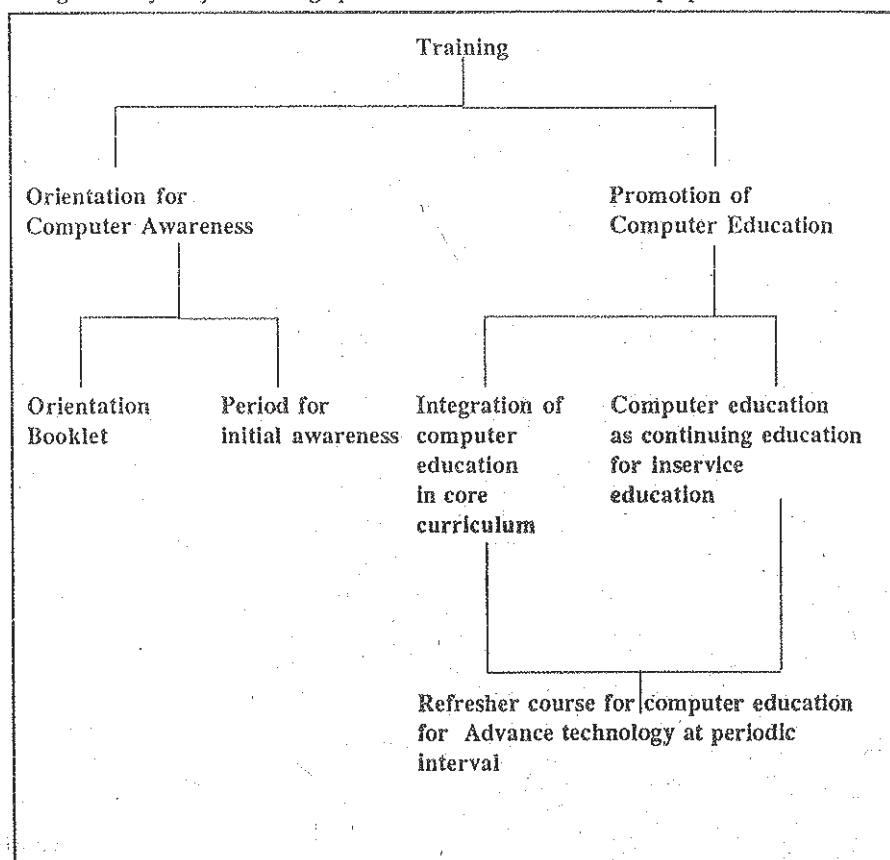
Training of users can be designed in two time-series, i.e., orientation, and Promotion of computer education.

Objectives of training

- For general use and orientation to computer awareness.

- To promote computer education in the core curriculum of G.N.M. syllabus.

Training to prior implementation can consist of a course outline and orientation booklet can be prepared. The booklets



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