Computer- based Versus Traditional Method for Teaching Practical Skills to Technical Nursing Students.

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ABSTRACT

Objectives: To study the effect of using computer technology as a support for practical learning of technical nursing students on their practical achievement**.Design**: **A** quasi-experimental study design was used to conduct the study . **Setting**: The study Conducted at Technical Nursing Institute of El kasr El- Ain and maternity Hospital at El Kasr El-Ain,both affiliated to Cairo University. **Subjects and Methods**: All second year students in the two academic years (2007–2008) and (2008 – 2009) enrolled at Obestatric and Gynecology Nursing Course were included in the study each group consist of 80 students.In the academic year (2007/2008)the students studied specified Obestetric and Gynecology nursing procedures and those were considered as the control group and were subjected to traditional method of teaching. Students enrolled in the academic year(2008 / 2009) in the same course were considered the study group as they were subjected to computer based method of teaching. Data were collected through : 1) A developed computerized module for basic maternity and gynecology competencies. *2)* An observational check list, *3)* A scoring format for assess students' competency level to procedure and 4) Student and instructors acceptance and recommendation sheets.

Results: The results revealed that; there were statistically significant differences between both groups at lab in practice the procedure except for urine analysis and immediate care of the newborn. It also showed statistically significant differences between both groups in clinical performance among all specified nursing procedures except for urine analysis. **Conclusion** : In the light of the result the study concluded that the computer based method is effective for teaching maternity nursing practical skills to technical nursing students**. Recommendations**:Based on the previous findings, the following were recommended; Integrate computer based learning with the traditional method of teaching practical skills to nursing students . Enhancement of the facilitation skills of the Instructors' to give instructive support for the students.

Key wards: Computer-based learning, traditional learning, achievement, practical skills.

CONTENTS

LIST OF ABBREVIATIONS

Abbreviations	*Meaning*
CBL	**Computer based learning**
CCLs	**Clinical Skill Checklists**
CD-ROM	**Compact disc read only memory**
CLGs	**Clinical Learning Guides**
CPU	**Central processing unit**
CRT	**Cathode ray tube**
HWD	**Health Workforce Development**
IT	**Information technology**
ITAA	**Information Technology Association of America**
LAN	**Local area network**
LCD	**Liquid crystal display**
MOHE	**Ministry of Higher Education and Scientific Research**
RAM	**Random access memory**
SCU	**Supreme Council of Universities**
VCRs	**Video cassette recorders**
HWD	**Health workforce development**

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INTRODUCTION

The process of educational change presents unique challenges for students, faculty, and institutions as they participate as stakeholders in curriculum transformation. The demands for change in nursing curricula have escalated in the last decade. It is widely acknowledged that a nursing curriculum should overtly and systematically foster the development of the behaviors and skills that graduates will require to fulfill the societal expectations of health care professionals. Content-focused curricula cannot keep pace as the advances in technology and information continue to dramatically change the skill set needed for professional practice ***(Rideout & Carpio, 2001).***

Information Technology (IT) and associated tools such as Computer Based Learning (CBL) are probably among the most dominant forces of change in the educational process over the last two decades. Scientific and technological developments started a new period called “Information Age”. In the last quarter of the 20th century, important developments seen in data processing, rapid changes that can be called as computer revolution have caused education systems to undergo a

complete transformation taking from traditional forms. Over the last few years, there has been a great expansion in the computer-based methods of teaching and learning. The implementation of such methods into curriculum has brought about very excellent effective results on students performance ***(Kokol et al., 2004).***

Technology is revolutionizing the design, delivery, and evaluation of nursing education. Technology may enhance the students learning and may assist most students in achieving their academic standards. When technology and appropriate teaching methods are combined, technology may increase the academic achievement. As technology is incorporated into educational programs, nurse educators are faced with new challenges related to development, implementation, and testing. Combining technological applications in support of classroom and clinical education can make the best use of limited faculty, financial and clinical placement resources (***Monahan, 2005).***

Computers have integrated learning with multimedia presentations. Reference books and procedures have been replaced by compact discs with read-only memory (CD-ROM

or CD) that contain pictures, sound, and video, as well as the standard text. In the classroom students can observe and listen to the mechanics of movement in slow motion and play over those parts they do not understand ***(Tewissen et al., 2006).***

Clinical experience has been always an integral part of nursing education. It prepares student nurses to be able of "doing" as well as "knowing" the clinical principles in practice. The clinical practice stimulates students to use their critical thinking skills for problem solving (***Wong, 2003).***

Clinical teachers should function as culture brokers to help integrate student more fully into the real world of nursing practice. The instructors have a responsibility to assess that students have the desired level of skill development before entering the clinical setting. When learning complex skill, is more efficient for students to practice the parts first in a simulated setting such as a skill laboratory, free from the demands of actual practice setting. Students should have ample skill practice time before they enter the clinical area so that they are not expected to perform a skill for the first time in a fast – paced, demanding environment **(*Johns, 2004).***

Justification of the study

Quick changes on the field of informational communication technologies force educational and other institutions to think about different ways of teaching and learning in both formal and informal environments. It addition, it is well known that due to fast advancement of science and technology, the knowledge gained in schools is getting out-of-date rapidly, so life long learning is becoming an essential alternative. The use of technologies have a positive impact on the development of critical thinking skills of students, there are fundamental and significant tools used in classrooms and the workforce as well foster greater understanding of diverse cultures. The concept of informatics has emerged over the past decade as integral part to nursing practice. Educational technology is the tool and the process that bridge the teacher, the learner and instruction for the purpose of enhancing learning and it also allows a vast amount of recent knowledge on demand, free of charge, to a vast number of students located virtually anywhere that may initially appear a godsend to those who extol the value of education.

AIM OF THE STUDY

To study the effect of using computer technology as a support for practical learning of technical nursing students on their practical achievement.

This aim will be achieved through:

1. Developing a computer-based practical educational material for maternity nursing and testing its validity and reliability.
2. Comparing the achievement of the students subjected to traditional teaching of the practical nursing competence method and students subjected to computerize practical nursing competences.

Research questions

1- Does using a computer-based practical educational material for maternity nursing improve practical achievement of technical nursing student?

2- What is the difference in the practical achievement of the students subjected to traditional teaching of the practical nursing competences method and students subjected to computerize practical nursing competences?

REVIEW OF LITERATURE

Chapter I

Learning and Teaching Process

Education, as the broad umbrella process includes acts of teaching and instruction. The education process is a systematic, sequential, planned course of action consisting of two major interdependent operations, teaching and learning. This process forms a continuous cycle that also involves two interdependent players the teacher and the learner ***(Bastable, 2003).***

Nursing education, theory, technical, and clinical experiences are provided to prepare the graduate to function as a practical nurse. Nursing education requires the full and active participation of the student in an organized program of study. Educational experiences are designed to provide nursing education while encouraging self improvement and participation in professional and community activities. The faculty creates a learning environment that facilitates opportunities for practice of therapeutic nursing interventions, effective communication techniques, self awareness, critical thinking, and decision making ***(Bahn, 2003).***