

# Attitude of Nursing Students towards Computer Assisted Learning in a Selected Nursing College, Hafar al Batin, Saudi Arabia

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## **Abstract:**

*Computer knowledge and skills are becoming essential components technology in nursing education. The use of technology has become a central part of the practice of professional nursing. Graduates of nursing programs today must be able to use IT tools, such as clinical information systems. Saudi nurses must be prepared to utilize these technologies for the advancement of science and nursing practice in local and global communities. Little attention has been directed to students' attitudes about computer usage in academic communities in Saudi Arabia.*

**Keywords:** Attitude, computer attitude scale, Computer anxiety, confidence, liking, usefulness.

## **Introduction**

Technology is an effective tool for promoting meaningful and engaged learning. It allows students to work on authentic, meaningful and challenging problems and echo the dynamics of professional problem-solving. Using computer promote the development of thinking skills among students. Education experts suggest that local schools can improve teaching methods if technology is used during lessons. According to a recent survey conducted in 2013 among students in the GCC, learning is not broad enough and 28 percent have requested the increased use of technology in classrooms. Schools in developed countries have used technology in classrooms since 1999. Professional development activities may not provide ongoing, hands-on training for teachers to translate technology into lesson plans. (Aisebail 2004). Too much use of technology in classrooms can make students disregard the use of pen and paper. Schools in Saudi Arabia have not reached a standard where they can use technology just as easy as they use textbooks (Alquraini et al. 2007). Computer technologies provide powerful tools and applications that promote teaching and learning experiences. Utilizing technology has become the focus of educational managers and administrators (Chen 2006). With the increase emphasis on the use of computer technology in education, higher education institutions are challenged to prepare competent teacher educators who have the knowledge and skills to use computer technology effectively in the classroom 4. Using and integrating technology in instruction require considerable time to learn how to use new technologies, to develop new instructional materials, and to implement technologies in the classroom (Bross 2005). Saudi Arabia,

like other countries, has recognized the significant role of computer technologies in education, and makes efforts to provide computer technologies to colleges, and universities. Educational policy planning in Saudi Arabia occurs every five years. The seventh development plan (2000 - 2005) in Saudi Arabia included a comprehensive plan to integrate Information Computer Technology (ICT) in its education system. Bridging the technological gap between Saudi Arabia and the technological advanced countries by 2020 is on the top of Saudi Arabia development plan's priority (SAHI 2007). Accordingly, Saudi Arabia needs to recognize the conditions that promote the use of computer technologies in education. Computer knowledge and skills are becoming essential components technology in nursing education. The use of technology has become a central part of the practice of professional nursing. Graduates of nursing programs today must be able to use IT tools, such as clinical information systems. Saudi nurses must be prepared to utilize these technologies for the advancement of science and nursing practice in local and global communities. Little attention has been directed to students' attitudes about computer usage in academic communities in Saudi Arabia. Their attitudes about the use of computers for the enhancement of learning are relatively unknown. Few research studies have been identified that explicate Saudi Arabian nursing students' attitudes toward computer usage for the acquisition of knowledge and skills (Blake 2009).

Attitudes toward computer use among Saudis have not been systematically studied. Attitudes are consistent opinions that are shaped by experiences, worldviews, cognition, and emotions that determine an individual's opinion about computers, or people, or events (Attack, 2003). This

perspective suggests that attitudes influence the reactions that people have towards computers, others, and events that occur over time. Furthermore, it suggests that students who are exposed to computers in their academic programs might have some preexisting opinions about the use of computers as an enhancement for the acquisition of knowledge and skills in nursing. In regards to age, younger subjects were more likely to have been exposed to technological innovations. They were more likely to use to express more favorable attitude towards computer technology. The result regarding the significance of age, however were inconsistent. Age has impacted attitudes toward computer technology both positive and negative way (Alsebaill 2004). Younger students enjoyed working with computers more than older students. They were also more confident and enthusiastic about computer use than their older counterparts (Broos et al 2005) Previous experience, exposure and knowledge regarding technological innovations have been repeatedly hypothesized as resulting in favorite attitude toward computer technology. Nursing students with previous exposure to and have undergone training in computer were found to be more confident and have positive attitude towards usage of computer in nursing college. They tend to learn faster and easier than those without computer training or exposure (Adams 2006). As a result, many countries have started to integrate computer courses in to the nursing curriculum to build confidence at a very high stage (Aiquraini et al .2007). Previous studies showed that nursing students held negative attitude towards computer technology in the area of fear of documentation ( Hegeney et al 2009) A follow up experimental study using a quasi-experimental design regarding exposure to computer technology by student nurses revealed no significant differences in attitude towards computer technology prior to exposure .The experimental group, however, which was exposed to computer technology, demonstrated a significant positive change in attitude after exposure (Nkosi 2011). A meta-analysis study conducted among Saudi Students studies showed that computer-based instruction usually produces positive effects on students. Computer-based instruction also produced small but positive changes in student attitudes toward teaching and computers, and it reduced substantially the amount of time needed for instruction (Kutluca 2010 ) Previous studies have reported on a lack of access to computer in the home other study area which gives a negative attitude towards the use of computer (Al-Zaidiyeen 2010). Technology will be introduced in to every institution of learning to expose young students to computer to promote positive attitude. The prevalent components of attitude towards computer usage are computer anxiety, computer liking and computer confidence (Ornes et al 2007). These responses are likely to develop when the individual does not have the confidence that he/she has or can develop the skills necessary to utilize the computer in an advantageous manner. Computer anxiety consists of a variety of negative

feelings toward the use of the computer; there is also some resistance toward learning how to use the computer to one's advantage. This abiding anxiety involves a diverse range of human emotional states, including fear, apprehension, uneasiness, distrust, and a lack of confidence about the essential skills that are needed to display even minimal knowledge about the computer ( Smith 2011). Anxiety is a basic human emotion that has psychological and physiological manifestations. Humans are genetically programmed to avoid anxiety-provoking situations. Hence, if students have negative attitudes about the use of computers, they will perhaps avoid them and continue to learn from models with which they are familiar (Stricklin et al 2003) another important aspect that is related to computer usage and mastery is computer confidence. An expression of computer confidence may be evident in the amount of time that a person spends working with the computer, the use of the computer for the exploration of new knowledge and skills, and the acquisition of expertise in new fields of inquiry (Blake 2009). Conversely, individuals who express or demonstrate a lack of computer confidence might shun the computer, revert to older and more restrictive models of learning, and never discover the joy of learning through this electronic medium (Ali et al 2004) Computer liking is the third element in the Computer Attitude Scale and it is conceptualized as a sense of enjoyment, exhilaration, stimulation, and a willingness to learn about computers. Behaviors such as talking and thinking about computers are typical actions that are reported by students and others. Talking and thinking about computers tend to enhance one's interest and improve his/her knowledge and skills, which are needed to master the computer. When students make statements about the computer ("I think I would enjoy working with computers"), they are an indication that the person is interested in or liking the computer to the extent that more time and effort could be invested in this medium (Yaghmaie & Jayasuriya 2004) Computer usefulness is referred to as the extent to which an individual thinks that using a computer will improve or enhance his/her performance. It also encompasses the notion that computers could be helpful in the completion of other tasks and in future work. When students internalize the sense of computer usefulness, they are likely to explore the use of the computer for their individual learning and mastery. A study conducted to investigate the attitudes of Taiwanese undergraduate non-traditional students toward computer usage. The study included (n= 354) students who were enrolled at the Institute. The findings of the study suggested that non-traditional students had a positive attitude toward computers; they also found that age was a significant variable that predicted attitudes toward computer usage. Finally, non-traditional students who had access to computers at home reported more positive attitudes toward computers than those without access to a computer at home. From this study, it can be inferred that earlier exposure to

computers suggests a more positive attitude toward this technology, and a greater understanding of its usefulness in education and daily living activities. In addition, the findings also suggest that exposure to computers in the home had a positive impact on the students' attitudes about computers and their willingness to use them for learning and other projects. (Ruiz et al 2007)

A review of related literature revealed that nurses must learn how to use technology (Teo 2008) However, the acceptance of new teaching styles are not quickly embraced or adopted through technology. Skills are needed in accessing, managing, and examining information (Illiyasu 2005). Computers enable practitioners to process information that is accurate, unduplicated, error-free, and accessible from remote areas by multiple persons at the same time (Yec 2002). Studies evaluated the differences in traditional classroom lecture and an experimental group taught using Computer Assisted Instruction (Docherty et al 2006). The results of this study were that students felt that Computer Assisted Instruction made class more interesting and highly organized. The use of Computer allowed for integration of learning and increase students' involvement in the class without feeling self-conscious. However, the researcher reported that it was easier to revise lecture materials with Computer (Karasar 2005) Students in the Computer Assisted Instruction classrooms were attending class more consistently and offered more verbal comments than students in the traditional classrooms (Gill, 2007). Researchers suggested that research is needed to assess nursing education programs. (Maag 2006) Use of Computer allows the students to be active participants in their learning and therefore students can progress at their own pace. Computer can help students develop creative abilities and induce changes in the cognitive and affective outcomes (Raslan 2006 ) Students are entering the information age in which most of the jobs will require them to have technology knowledge and skills (Tarnow et al 2005). Little attention has been directed to students' attitudes about computer usage in academic communities in Saudi Arabia. Their attitudes about the use of computers for the enhancement of learning are relatively unknown. Few research studies have been identified that explicate Saudi Arabian nursing students' attitudes toward computer usage for the acquisition of knowledge and skills. One factor that determines the successful implementation of computer is users' attitudes toward computers (Albirini 2006). The findings are expected to be beneficial to university leaders, the nursing faculty and staff, and the students. Based on the findings of this study, the leaders in the schools of nursing and the students could begin to identify approaches and methods that could be used within Nursing College to increase student acceptance of computer usage as a mechanism to enhance their learning and skills acquisition. It also has implications for other areas of education that serve as the

foundation of nursing. Included are the core academic courses that are essential for critical thinking and decision making in nursing. An additional benefit would be to make students more self-aware of their needs to improve their performance in computer skills and professional writing.

### **Aim:**

Purpose of this study is to examine the attitudes of nursing students towards computer. Specifically, the study has been designed to investigate the influence of, age, accessibility of computer, level of study, previous experience in use of computer on students' attitudes toward computer usage.

### **Methodology**

The target population for the study was nursing students in the College of Applied medical Science, Hafar Al batin, Saudi Arabia. The students are undergraduate nursing students (n =110) who are studying for diploma or degree participated in the present study. They were selected using a purposive non-probability sampling method. Data were collected by a Computer Attitude Scale (CAS) adopted from Loyd and Loyd. (1987). These questions were structured in four-point Likert-like scale consisting of 40 items distributed among four 10-item subscales that measure computer anxiety, computer confidence, liking of computers, and perceptions of the usefulness of computers. Each of the subscales consists of both positively and negatively phrased statements. In response to the statements, the subjects were requested to indicate which of four responses, on a rating scale of 1-4, best described their attitudes toward computers. In this questionnaire, 4 = strongly agree; 3 = slightly agree; 2 = slightly disagree; and 1 = strongly disagree. The Likert - style scale was preferred because it is the most commonly used attitude scale, and it provides a better spread of opinions relating to attitude towards IT (Myers 2002) before the adaptation of the questionnaire, it was reviewed by the researchers and also validated by nursing educators from the College of Nursing to obtain experts opinion. The questionnaire included items about demographic variables, age, level of class, access to computer and previous experience in use of computer and Likert - style attitudinal statements about the use of computer. The questionnaire was pretested among five nursing students in who have similar characteristics to the study group. This was done to determine the effectiveness of the tool and these and these nurses were not included as study respondents during the main study. The questionnaire was tested to enable the researchers to ensure the feasibility, reliability and validity of the study tools. (Deniz et al 2000). The feedback from the pretest led to the modification and clarification of some of the questions. During the month of January 2014 , the questionnaire was self-administered to the nursing students attending in nursing college at College

of Applied Medical Science, Hafar Al batin, Saudi Arabia. The questionnaire were administered by the researchers and collected 1 hour after administration. The entire second year and third year nursing students participated in the study, giving a response rate of 100%.

### Data Analysis

The researchers collected all the questionnaire 1 hour after they were administered. The data were checked for completeness. Inconsistencies were identified and addressed. Data were captured and analyzed using the SPSS statistical package version 18. Descriptive analyses (frequencies, mean, median mode and cross tabulations) were used to analyze all items on the questionnaire. Responses on the attitudinal statement were re-coded from a four- point Likert style at a 4- point scale and the coding style as follows: 4 = strongly agree; 3 =slightly agree; 2 = slightly disagree; and 1 = strongly disagree.

### Result

Of the 110 questionnaire distributed, all were returned giving a 100% response rate. Sixty –four (58%) respondents were in the age group of 21-23years, thirty –three (30%) were in the age group of over 23 years and only thirteen (12%) were under 20 years of Age. Over all, accessibility of computer reveals that 84 (76%) of the respondents stated that they have opportunity to use computer outside college while 26(24%) have not getting opportunity to access computer. The respondents were asked to state their previous experience in use of computer. The result shows that 77(70%) have previous experience in use of computer and 33(30%) were in very low previous experience in use of computer. other demographic details are shown on Table 1

Variable		N	%
Age	23 +	.33	30
	21-23	64	58
	Below 21	13	12
Accessibility	Yes	84	76
	No	26	24
Experience	Very low	30	27
	Low	38	35
	High	42	38
Educational Level	Diploma	88	80
	Degree	22	20

### Attitude towards Computer

The Nursing students were also presented with a Computer Attitude Scale (CAS) to describe the students' attitudes toward computer usage. The statements were rated on a four-point Likert scale ranging from , 4 = strongly agree; 3 = slightly agree; 2 = slightly disagree; and 1 = strongly disagree. In response to the statements, the subjects were requested to indicate which of four responses, on a Likert scale of 1-4.

The results of this study demonstrated that the respondents were positive in their attitude towards computers attitude components. On the positive attitudinal statements, nursing students agreed that they have a general acceptance of use of computers as learning tool. (Table 2). Those with previous experience in use of computer were associated with more confidence in use of computer ( $p \leq .001$ ). Accessibility of the computer outside the college also were associated with positive attitude of students towards computer ( $p \leq .001$ ) (Table 3).

**Table 2: Descriptive Statistics for Computer Attitude Components**

Scale	N	Mean	SD	Min	Max	Reliability
Anxiety	10	27.58	6.44	10	40	0.78
Confidence	10	28.36	6.62	10	40	0.84
Liking	10	27.30	6.12	10	40	0.77
Usefulness	10	30.83	5.46	10	40	0.71
Overall	40	124.07	20.99	10	40	0.92

**Table 3: Correlation of demographic variables to computers attitude components**

Variable	Anxiety	Confidence	Liking	Usefulness	Overall
Age	0.13	.13	0.04	0.04	-0.08
Class	-0.06	-0.05	-0.02	-0.09	-0.01
Accessibility	0.28***	0.34***	0.36***	0.17**	0.34***
Experience	0.32***	0.41***	0.32***	0.15*	0.36***
	* $p \leq .05$	** $p \leq .01$			*** $p \leq .001$

## Discussion

Although the present study was restricted to female nursing students, the findings raise issues that have wider applicability. Overall responses on the attitudinal statements were positive which implies that the nursing students have positive attitude towards using computer in nursing education. These findings are consistent with the findings by Teo, Lee & Chai, (2008) which imply that nursing students have a positive attitude towards computer technology and are willing to use computer to improve the quality of nursing education.

Previous experience in use of computer found positive attitude towards use of computer. Broos et al (2005), reported that users with longer Internet usage had more positive attitudes toward the technology. That is to say, the longer the students had had experiences with the Internet and computers, the more positive were their attitudes. Nursing students with previous exposure to and have undergone training in computer were found to be more confident and have positive attitude towards usage of computer in nursing college. They tend to learn faster and easier than those without computer training or exposure. Reznikoff (2007) As a result, many countries have started to integrate computer courses in to the nursing curriculum to build confidence at a very high stage. (Yaghmaie & jayasurya 2004).

Cavas et al (2010) have lamented on the fact that lack of access to computer in the home other study area has led to nursing students a negative attitude towards the use of computer. Technology will be introduced in to every institution of learning to expose young students to computer to promote positive attitude. McNeil et al (2006) recommended that earlier exposure to computers suggests a more positive attitude toward this technology, and a greater understanding of its usefulness in education and daily living activities. Thus, exposure of nursing students to computers in the home had a positive impact on the students' attitudes about computers and their willingness to use them for learning and other projects. Chen & Chang (2010) recommended that computer-based instruction usually produces positive effects on students. Computer-based instruction also produced small but positive changes in student attitudes toward teaching and computers, and it reduced substantially the amount of time needed for instruction.

Although the responses on the attitudinal statements shows the nursing students have a positive attitude towards use of computer, the other factors that hinder the positive attitude towards computer like anxiety, less confidence, lack of access of computer, less exposure to computer usage should be taken into consideration. A positive attitude could

easily lead to a negative attitude and also not adopt and implement the advances in computer technology available for education or clinical practice.

## Recommendations

Acquisition of knowledge in information technology allows the students to participate in self-directed learning. Use of computer is the low coast; high performance technology that improves the student's learning environment and their knowledge and skill level. New computer technologies in the work environment may require specific skills that are built on basic attitudes. The use of technology has become a central part of the practice of professional nursing. Computer knowledge and skills are becoming essential components technology in nursing education. Graduates of nursing programs today must be able to use IT tools, such as clinical information systems. Many students still need assistance with basic computer skills, especially those related to college course expectation.

The use of computers in nursing administration is and will continue to be a major component of the health care industry. From a workplace perspective, nurse administrators are expecting that nurses who join their workforce will be familiar with computer technology and will be able to utilize it for the enhancement of patient care. Throughout their careers, nurses witness development in Electronic Health Records (EHR). It is becoming a universal method of transforming data from a paper based to electronic medium

Nurses who are expected to use computers during their undergraduate learning experiences would be better prepared to utilize computers in their practice and for their continuing learning needs. Given the growing frequency of the use of computers in educational settings and in practice systems, nurses will be expected to utilize computers for their personal learning and for quality patient care and safety. The results of the current study provide insight into nursing students' attitudes towards computer. However, additional studies are needed to help to clarify the utility of computer-based learning in clinical practice. Additional research that will encompass practical computer activities to verify the nature and level of computer skills

## Limitation of the Study

The present study involves female nursing students studying undergraduate nursing course at a selected nursing college at Hafar al Batin only. The sample was also too small. Generalization including both genders outside of this college should be made cautiously.

**Conclusion:**

Attitude may be a hindrance or a motivational factor to learning about and using computers. Negative attitude may promote resistance to the acceptance and utilization of computer technology. On the other hand, positive attitudes may enhance student learning in classroom and society computer awareness. It is importance to promote and maintain positive attitude towards computers, especially among future generations.

Education in Saudi Arabia, in general, is based greatly on traditional teaching methods. In the traditional method, instruction is teacher-centered with students having a passive role .However, with the incorporation of technology in classrooms, traditional teaching methods and the teacher's role in classroom should be changed. Teachers should work toward more student-centered teaching in which they work as facilitators in the technology classroom. Therefore, student's use of technology depends greatly on their willingness to execute changes in their learning methods.

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