Computer Literacy Among the Students and Faculty Members of Dental Sciences

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Abstract - **The world of computing has influenced the health sector, introducing number administrative as well as clinical innovations. The present paper focuses on the use of computer, experience in the use computer and use of various computer applications by students and faculty members of dental sciences. The Study found that all the respondents used computer. Majority of respondents had their own computers and they had 3-5 years of experience in using computer. Majority of them felt that they were most competent in computer skills and therefore training is not necessary. Majority of the respondents used computer for teaching and research. Some of the respondents also used for maintaining patients record, diagnosis and monitoring of treatments equally and some of the respondents using for scheduling the patients and billing.**

Keywords: **Information and Communication Technology (ICT), Computer Literacy, Dental Science**

I. Introduction

In today's global and competitive environment, interactive Computer technology is becoming a widely accepted tool for multi-facet development in view of the flexible, quality services it offers and the potential to revolutionize the traditional education system. According to Albirini (2004) and Bakar and Mohamed (2008), the last two decades have witnessed a proliferation of these computer technologies in education landscape. Information and Communication Technologies (ICTs) are generally accepted as a modern instrumental tool that enables the educators to modify the teaching methods they use in order to increase students interest. During the last two decades higher education institutions have invested heavily in Information and Communication Technologies (ICT). ICT has had a major impact in the university context, in organization and in teaching and learning methods (Youssef and Dahmani, 2008). Keeping in view the importance of ICT in general and computer in particular the present study reports the results of a survey conducted to know the awareness and use of computer and its various applications by students and faculty members of the dental colleges in Davanagere and Chitradurga.

II. Review of Literature

Some research studies have been carried out which examines the computer literacy and skills of different social groups such as academics, faculty members, professionals and students. However, this review focuses primarily on the studies related to students and faculty members in the dental sciences. A survey conducted by the Coral Castello Castaneda and *et. al.* (2008) demonstrated that a high percentage (93.30%) in the use of computer, but the level of computing knowledge is predominantly moderate. Majority of respondents used at home, which suggests that the majority own a home computer. Use of computer at university level is low, only 14.16% indicated the low level of development or accessibility of computers in Seville compared to other universities, possibly due to current problems with space in the school. Lal and *et. al.* (2010) conducted study on internet use by medical students in North India. It revealed that use of computers was either for personal or professional purpose which was reported by 382 (85.1%) followed by study purpose, being significantly higher among post graduates (94.9%) as compared to under graduates (81.6%) (p<0.001). This was almost similar to the figures reported from a medical college in South India. But, it was observed to be lower as compared to that reported among medical students at the University of Edinburgh (98%). The difference might be due to time of exposure to computer technology at the two places. At present, the use of computers in medical education and patient care at MAMC was limited. It is being used only in a few specialties viz. radiology, biochemistry.

These specialties use automated systems for investigation purpose. At the same time, the use of computers by 85.1% participants in the study in spite of limited availability of computers in the college/hospital was encouraging.

Manhas (2008) conducted study on use of internet shows that majority of the respondents have ranged 1 to 5 years experience of Internet use. Only 21.6% have more than 5 years of experience of Internet use. The respondents were asked to indicate their level of Internet and computer literacy. Majority of the respondents (69.6%) have an average level of Internet and computer literacy. 26.3% of the respondents reported that they have below average level of Internet and computer literacy. Only 4.1% admitted that they are expert in computer and Internet searching techniques. In the same year Trivedi and *et. al* (2008) study results showed that more than three-fifths of respondents said their level of computer literacy level was "just conversant," with nearly 30% "well conversant." The fact that more than 90% have some level of computer knowledge is comparable to the 98% of physicians at the University of Pennsylvania Medical School and 96% of medical and dental students in a Nigerian teaching hospital. While most respondents had some computer knowledge, more than three quarters had no formal computer training.

Another study by Carlos Flores-Mir and *et al* (2006) conducted a study on the use of computer. More than 60% of the dentists indicated that computer technology was quite capable or very capable of improving their current practice by increasing patient satisfaction, decreasing office expenses, increasing practice efficiency, increasing practice production, improving record quality and improving case diagnosis and treatment planning. More than 50% of respondents reported that digital photography and digital radiography were quite useful or very useful. About 70% of the dentists agreed or strongly agreed with using digital and electronic technologies to consult with dental specialists. Cost of equipment and lack of comfort with technology were regarded as significant or insurmountable obstacles by substantial proportions of respondents.

A study by Rajiv Arora (2009) revealed that 93.3% of the students could access and use the computer. E-mail was the most popular of the Internet services used by the students. The results indicate that the students need formal training to use word processor, Power Point and statistical analysis. Students need formal training in accessing the medical databases like Pubmed and Indmed. In case of Smith and *et. al.* (2009) study on computer literacy the respondents demanded that the computer literacy should be a part of every modern undergraduate curriculum. They also felt that computer assisted learning applications and web-based learning activity could effectively supplement the traditional undergraduate curriculum and that a suitable information system would improve the efficiency in the school's management of students, teaching and clinics. A study by Ghousia Rahman (2011) reveals that 78.7 % of the students were using computers since more than two years. Approximately 66 % students utilized their computers every day for their studies both at home and college. Majority of the students, about 63.7 % gained their knowledge about computers from personal study and experience, and the remaining 36.3 % acquired their knowledge from a special computer course.

III. Objectives

The survey instrument attempted to elicit answers to the following questions.

a) To know the place and purpose of use of computer by students and faculty members;

b) To find out the frequency of use of computer by students and faculty members;

c) To examine the use of various computer applications by the students and faculty members in pursuit of their teaching, research and practice;

d) To know the experience in use of computer by students and faculty members.

IV. Methodology

To achieve the objective of this study a structured questionnaire was designed after reviewing related literature. Questionnaire consisted of questions on the use of computer, years of experience in the use of computer, frequency of use of computer etc. Questionnaires were physically delivered to students and faculty members. Repeated visits were made to get back the dully filled questionnaires. A total of 200 questionnaires were distributed randomly and out of which 153 dully filled copies were returned, constituting a 76.5% response rate.

V. RESULTS AND DISCUSSION

TABLE I DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Demography of respondents		Counts	Percentage
Gender	Male	72	47.36
	Female	81	53.28
Designation	Students	101	66.44
	Faculty	52	33.98
Academic experience	1-5 years	36	69.23
	5-10 years	09	17.30
	> 10 years	07	13.46

The data summarized in the Table I indicates that the demographic characteristics of respondents. 53.28% of respondents were female and 47.36% of them were male respondents. It also shows that 66.01% of respondents were students while 33.98% respondents were faculty members. Among respondents 69.23% respondents were having 1-5 years experience, 17.3% respondents were having 5-10 years experience and only 13.46% were having more than 10 years experience.

TABLE II USE OF COMPUTER

Respondents	Response	
	Yes	No
Faculty Member(n=52)	52(100)	-
Students (n=101)	101(100)	-
Total (n=153)	153(100)	-

Note: The number given parenthesis represents the percentage .
The total number is more than 100% because of multiple choice questions.

The result shown in Table II illustrated the use of computer by the students and faculty member of dental sciences. Not surprisingly all the 153 respondents (100%) used computer for academic and clinical purpose.

The total number is more than 100% because of multiple choice questions.

The respondents were asked to indicate the place of use of computer. The data presented in Table III reveals that 73.2% of the respondents used computer at college followed by the 66% at home. 32.67% of respondents used at cyber café and only 3.92% of respondents used computer at other locations (neighbor's home/friends home).

Respondents were asked to indicate the experience in using computer and data is summarized in Table IV. It is evident that 33.98% of respondents were having 3-5 years' experience in using computer. Only 24.18% of them were using computers since 6-10 years. It is found that some of the students and faculty members were started using computer more than ten years.

Respondents were asked to indicate the frequency of using computer. The data is presented in Table V and showed that 34.64% of respondents used computer every day followed by 30.71% used 2-3 days once and 17.64% using once in a month

TABLE III PLACE FF USE COMPUTER

Respondents	Location			
	College	Home	Internet Cafe	others
Faculty Member(n=52)	41(78.84)	39(75)	15(28.84)	01(1.92)
Students (n=101)	72(71.28)	62(61.38)	35(35.65)	05(4.95)
Total (n=153)	112(73.20)	101(66)	50(32.67)	06(3.92)

Note: The number given parenthesis represents the percentage

TABLE IV EXPERIENCE IN USE OF COMPUTER

Respondents	Time					
	Only 6 months	One year	2 years	3-5 years	6-10 years	More than 10 years
Faculty Member(n=52)	05(9.61)	03(5.76)	05(9.61)	17(32.69)	17(32.69)	5 (9.61)
Students (n=101)	05(4.95)	11(10.89)	10(9.90)	35(34.65)	20(19.8)	20(19.8)
Total (n=153)	10(6.53)	14(9.15)	15(9.80)	52(33.98)	37(24.18)	25(16.33)

Note: The number given parenthesis represents the percentage .
The total number is more than 100% because of multiple choice questions.

TABLE V FREQUENCY OF USING COMPUTER

Respondents	Frequency			
	Every day	2 – 3 days a week	Once in a week	Once in a month
Faculty Member (n=52)	22 (42.3)	19 (36.53)	5 (9.61)	6 (11.53)
Students (n=101)	31 (30.69)	28 (27.72)	21 (20.79)	21 (18.81)
Total (n=153)	53 (34.64)	47 (30.71)	26 (16.99)	27 (17.64)

Note: The number given parenthesis represents the percentage

TABLE VI PURPOSE OF USING COMPUTER

Features	Respondents		
	Faculty Member (n=52)	Students (n=101)	Total (n=153)
Teaching	31 (59.61)	13 (12.87)	44 (28.75)
Research	14 (26.92)	18 (17.82)	32 (20.91)
Patient accounting and billing	2 (3.84)	-	2 (1.30)
Procession insurance claims	1 (1.92)	-	1 (.65)
Maintaining patient treatment record	7 (13.46)	13 (12.87)	20 (13.07)
Scheduling patients	4 (7.69)	8 (7.92)	12 (7.84)
Diagnosis and monitoring of treatment	7 (13.46)	10 (9.9)	17 (11.11)

Note: Number given in the parenthesis represents the percentages
Total number is more than 100percentage because of multiple choice questions.

The respondents were asked to indicate the factors influencing them to used computer and the data is presented in Table VI. Table shows that 28.75% of respondents used it for teaching purpose followed by 20.91% for research. Only 13.07% used it for maintaining patient treatment record.

TABLE VII METHODS OF LEARNING TO USE COMPUTER

Methods	Respondents		
	Faculty Member (n=52)	Students (n=101)	Total (n=153)
Through a course in the college	6(11.53)	5(4.95)	11(7.23)
Through personal study & experience	11(21.15)	28(27.72)	39(25.49)
Through a special course	1(1.92)	6(5.94)	7(4.57)
Self-taught	10(19.23)	26(25.74)	36(23.52)
Family, friend, colleague	9(17.3)	17(16.83)	26(16.99)
Library training	3(5.76)	3(2.97)	6(3.92)

Note: The number given parenthesis represents the percentage
The total number is more than 100% because of multiple choice questions.

Respondents were asked to indicate the methods of learning computer skills. The data presented in Table VII showed that 25.49% of respondents learnt through personal study and 23.52% of respondents learnt through self-taught.

Respondents were asked to indicate the use of various computer applications. The data is presented in Table VIII

showed that 67.32% of respondents used internet followed by MS-excel (42.48%) and Word processing (32.02%).

TABLE VIII USE OF VARIOUS COMPUTER APPLICATIONS

Features	Respondents		
	Faculty Member (n=52)	Students (n=101)	Total (n=153)
Word processing	23 (44.23)	26 (25.74)	49 (32.02)
MS-excel	08 (15.38)	14 (13.86)	22 (14.37)
Presentations	28 (53.84)	37 (36.63)	65 (42.48)
Multimedia	12 (23.07)	19 (18.81)	31 (20.21)
Internet	30 (57.69)	73 (72.27)	103 (67.32)
Medline	16 (30.76)	15 (14.85)	31 (20.20)
Data Management	7 (13.46)	9 (8.91)	16 (10.45
Web development	1 (1.92)	4 (3.96)	5 (3.26)
Online discussion lists	2 (3.84)	4 (3.96)	6 (3.95)

Note: Number given in the parenthesis represents the percentages

TABLE IX NEED OF ICT TRAINING IN USING COMPUTER

Respondents	Response	
	Yes	No
Faculty Member(n=52)	21(40.38)	31(59.61)
Students (n=101)	33(32.67)	67(66.33)
Total (n=153)	54(35.29)	98(64.05)

Note: Number given in the parenthesis represents the percentages

Respondents were asked to indicate the need of information and communication technology training for using computer. It is found from the table XI that 64.05% of respondents felt that ICT training is not necessary for using computer. On the other hand 35.29% of respondents felt ICT training is necessary for using computer efficiently.

TABLE X NEED OF ICT TRAINING FORMAT IN USING COMPUTER

Methods	Respondents		
	Faculty Member (n=21)	Students (n=33)	Total (n=54)
Online training via email	4(19.04)	6(18.18)	10(18.51)
Face-to-face with an instructor	13(61.90)	27(81.81)	40(74.07)
Power point presentations	8(38.09)	19(57.57)	27(50)
Practical training involving hands-on	19(90.47)	30(90.90)	49(90.74)

Note: Number given in the parenthesis represents the percentages

Respondents were asked to indicate the methods of providing ICT training program. The data is presented in table X showed that 90.74% of respondents required practical training involving hands-on, followed by 74.07% required face to face with an instructor, 18.51% required online training via e-mail.

VI. Conclusion

The findings of the present showed that student and faculty members who participated in this survey were aware of computer and its usage. All the respondents (100%) used computer for their teaching, practice and maintaining treatment record. Most of the respondents learned about the computer and its usage through personal study or by self-taught. Majority of them felt that they were most competent in skills and therefore training is not necessary for the same. However few respondents were in need of training program for effective use of computers. The institution may conduct ICT training programs for the students and faculty members for improving their ICT skills.

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