

Original Research Article

## Changes in Perceived Computer Use and Knowledge in Sri Lankan Dental Students in the Last Ten Years

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**Abstract:** Advances in information and communication technology (ICT) have changed the life of everybody. Use of computer and internet have become a part of the university student's daily activity. The computer use may have been increasing among dental students. The present study aims to investigate the changing trends of the perceived knowledge regarding usage of computer in Sri Lankan dental students in past ten years. This study included two cross sectional paper based surveys conducted in the year 2006 and again in year 2015 among the undergraduate dental students representing all four academic batches in the Faculty of Dental Sciences, University of Peradeniya. Among the study participants 95 (55%) were males and 76(45%) were females in year 2006 whereas 119 (34%) males and 229 (66%) females in year 2015. Forty seven present students have reported having their own computer in year 2006 and it has increased up to 92% in the year 2015. In the year 2006 the type of device they have used for accessing internet was confined to laptops (2%) and desktop computers (7%) where as in the year 2015 smart phones (24%) and tablet computer (13%) have been included. Among dental students 67% of them reported that they have adequate knowledge of computer use before entering the university. This study reflects that the perceived use and knowledge of undergraduate dental students about internet and computer based learning have increased with the time. It is suggested that computer application for dental education is encouraged.

**Keywords:** Computer use, Dental students, Sri Lanka**INTRODUCTION**

Advances in information and communication technology (ICT) have changed the life of everybody. In the undergraduate, use of computer and internet has become a part of their daily activity. Use of the internet has already integrated into their daily communication habit [1]. The internet is a highly user friendly communication medium, which is cost-effective too. Through the internet, the required information can be accessed from every corner of the world without time barriers. The internet based information is frequently updated than methods use in the past to store the information such as book and journals, which helps in updating the modern knowledge and to motivate students for research activities [2]. In the health care delivery system including medical and dental field, computers have become a frequently used tool for office procedures such as billing, research and health education. Several studies have indicated that the use of computer based information system in dental and medical field can significantly improve the quality of care, thus enhancing the use of evidence-based treatment and updating the current knowledge [1-3].

Being the only institute in Sri Lanka conducting undergraduate and postgraduate education in dentistry and allied disciplines, from its commissioning of the new building complex in 1998, the Faculty of Dental Sciences (FDS), University of Peradeniya achieved an intranet for patient records with computer laboratory for student use. University LAN access, and computer aided learning (CAL) room were achieved in the faculty in year 2003. However the numbers of computer units remained far below the requirements. Two studies have been conducted on ICT awareness on Sri Lankan dental students. A survey carried out in 2006 has revealed that computer use seemed to be lower than that in the developed countries [4, 5]. A questionnaire based survey conducted in 2009 among students has revealed that among students about 88% of have used computers before entering university, majority of senior students (97.9%) use computers, students give priority to CAL CD (44.8%) and internet downloading (73.8%) as e-learning methods [6].

Though previous surveys reported on the computer literacy among dental students in Sri Lanka,

no study has been conducted on the changing trends among dental students' computer literacy.

**AIMS AND OBJECTIVES**

Over the years the use of computers may have been increasing among dental students. Thus, the present study aims to investigate the changing trends of the perceived computer use and knowledge of computer in Sri Lankan dental students in past ten years.

**MATERIAL AND METHODS**

This study included two cross sectional paper based surveys conducted in years 2006 and year 2015 among the undergraduate dental students representing all four academic batches in the Faculty of Dental Sciences, University of Peradeniya. The students in each batch were given a pre tested self-administered multiple choice questionnaire (MCQ) in year 2006 and 2015.

The items in the questionnaire concerned were: adequate computer facility of the FDS, frequency of computer usage, uses of computers during undergraduate studies, the students' knowledge in the use of different application software and operating systems.

The students were encouraged to answer carefully and the anonymity of the participants was emphasized. There were 270 students in the year 2006 and 240 (88%) of them have submitted the questionnaire. Among them 69 (28%) questionnaire were rejected due to incompleteness. In the year 2015, there were 375 students and 370 (98%) of them have submitted and 22 (5%) has rejected. Altogether 171 questionnaire from the year 2006 and 348 from the year 2015 were included to the study. A descriptive

statistical analysis were made and data were presented as proportions.

**RESULTS**

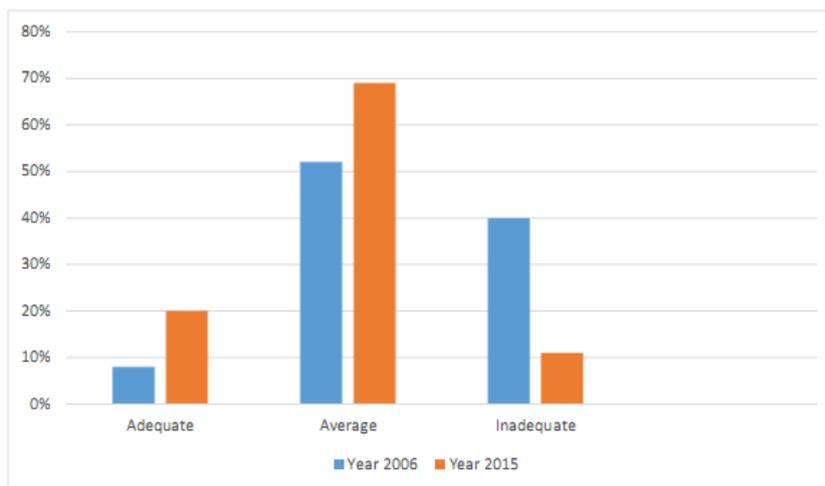
The distribution of the study sample is shown in Table 1. Among them 95 (55%) were males and 76 (45%) were females in year 2006 whereas 119 (34%) males and 229 (66%) females in year 2015. Forty seven present students have reported having their own computer in year 2006 and it has increased up to 92% in the year 2015. In the year 2006 the type of device they have used for accessing internet was confined to laptops (2%) and desktop computers (7%) where as in the year 2015 smart phones (24%) and tablet computer (14%) have been included. In the year 2006 majority of the students (72%) have felt that computer facilities at the faculty were inadequate and requested to increase the number of desktop computers in the faculty. Interestingly in 2015, majority of the students (87%) have requested to improve the free Wi-Fi facility where they have less concern about desktop computers.

The percentage distribution of their self-assessed computer skill level is shown in Figure 1 for both years. In the year 2006, there were 52% students who had admitted that their computer skills were average whereas 69% of students reported that in 2015. Both year 2006 and 2015, majority of the computer users (91%, 92% respectively) have used Microsoft Windows and there were very few number of students who used to work with other systems such as Linux. The number of students who are using the ICT for their education has increased with the time as 42% in 2006 and 99% in 2015.

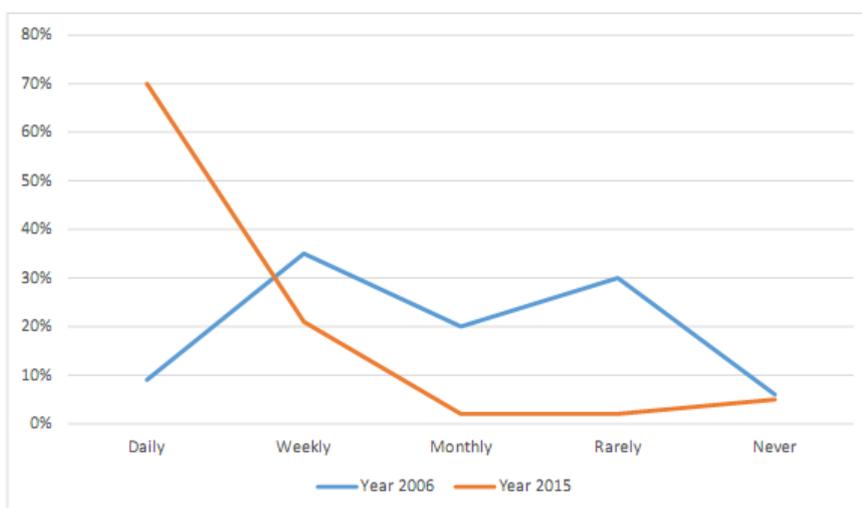
The frequency of using ICT among dental students showed an interesting variation and it has improved with time (Figure 2).

**Table 1: Distribution of the study participants in year 2006/2015**

Year of Study	No. of Students included	
	2006	2015
1 <sup>st</sup> Year	44	77
2 <sup>nd</sup> Year	39	87
3 <sup>rd</sup> Year	45	57
4 <sup>th</sup> Year	43	80
Total	171	348



**Fig-1: Percentage distribution of self-assessed computer skill level**



**Fig-1: Changes in Frequency of ICT use by students**

**DISCUSSION**

Various surveys have been conducted on Computer Knowledge and Information Technology among the dental, medical and nursing students. But, the present study shows a comparison of computer knowledge of with time among dental students in Sri Lanka. One of the reason for relatively low ICT literacy among Sri Lankan Dental students may be due to inadequate resources as compared to their European counterparts. However with the time all the assessed components of the ICT literacy and usage of computers have shown better results compared to year 2006.

In present study response obtained from questionnaire survey was relatively good in relation to the Computer and internet knowledge was observed more among dental students. Only few students had lower internet and computer knowledge which may be due to lack of time and access problems at home. Limitations in relation to the present study are; this study used multiple choice questions rather than yes or no format, which could be inconvenient for students to

answer and it has become difficult for presentation in tables.

In consideration to strength of the present study, dental students perceived that they used computer and internet services for updating recent knowledge, since it is easily accessible when compared to text books, most of the dental students are willing to have computer based learning program in the curriculum and this study proves that dental students possess adequate computer and internet knowledge, which can be used to provide comprehensive dental care by upgrading recent research and evidence based activity. This study may also reflect the attitude of dental undergraduate students to computer based learning in dental education.

**CONCLUSION**

This study reflects the perceived computer use and knowledge of undergraduate dental students about internet and computer based learning which has increased with the time. Computer knowledge has been

increased among dental students in year 2015 compared to year 2006. But its dental application was limited compared with general purpose. Hence computer application for dental education should be encouraged. During the last ten years students' need changed from requesting more desktop computer to free Wi-Fi. There for faculty should take necessary action to provide the free Wi-Fi service to the students.

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