EVALUATION OF INFORMATION AND COMMUNICATION TECHNOLOGY KNOWLEDGE AMONG UNDERGRADUATE DENTAL STUDENTS IN IRAN

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ABSTRACT

Aim: Information and communication technology (ICT) has been playing an important role on scientific development in dental education. The aim of this study was to survey information literacy of dental students and their attitude toward knowledge of ICT.

Method and Materials: A questionnaire contained 17 items was used to data collection. Access of computer, knowledge of computer and operating system, and the internet related questions, was including self-assessment of their computer knowledge. SPSS version 15 was used to analyze the data.

Results: The results showed that rate of respondents was 80% and there is not significant difference in computers and internet users of both sex. 50% of users were able to use Microsoft office production software. Only 30% of students had received the educational electronic material while 70% had not obtained them, not at all. The rate of Google search engine usage was 80.8% but the use of PubMed database was 54.6% and Medline/Ovid was 15.4%.

Conclusion: The present study revealed that the Information and communication technology comparable with students of other countries whereas accessibility of IT sources was poor. Expansion of computer-assisted learning which requires to careful strategic planning, resource sharing, IT education, increasing of electronic resources, and effective quality control should be implemented.

INTRODUCTION

The past few years have seen rapid advances in information and communication technology, and the pervasiveness of World Wide Web in everyday life has important implications for education. Research on computer literacy focused on the question whether medical students were ready for the foreseeable omnipresence of computers in the future doctors’ professional environments (1), i.e. whether they possessed the necessary computer skills (2). Although the benefits of ICT use in education cannot be clearly measured, many countries continue to introduce it based on the assumption that students should be able to function adequately in a rapidly evolving information society (ICT).

The use of computers as a learning tool in the medical and dental education dates back to the early 1970s (3) and its introduction was at the University of Kentucky (4). Information and communication technology (ICT) is an increasingly important tool in all aspects of dental education (5). The many areas in oral health care which have been impacted upon by Information and Computer Technology and its potential application in dental health education has been outlined by Mattheos et al (3). E-learning platforms and tools for management of information (eg, Web-based databases such as Medline, reference management software, etc.) are most important items in dental education (6).

Reductions in the cost of accessing information stored in databases and of communicating information among agents can be expected to have a very different impact on firm organization (7). Rapid development leading to enhanced medical literature retrieval applications, together with increased access to personal computers have changed both the study and practice environments in dentistry, as in other disciplines (8). Internet is now one of the most important sources of information for students of institutions of higher education throughout the world by providing access to education materials (9). There are a number of studies that indicate college students are one of the highest ICT use demographics (10).

METHODS AND MATERIALS: Undergraduate students in all years in the Qazvin (IRAN) Faculty of Dentistry were invited to participate in this study in December 2010.
The survey included a questionnaire that asking respondents to rate their overall confidence in the knowledge and skills of using information and communication technology. Respondents were also asked to rate their ability to use software applications to perform specific tasks (word processing, MS power point, internet access, etc.)

The questionnaire consisted of 17 items. Participants received a form that it was contained general information about the survey and study, informed consent ICT. These items are separated in to three parts. The first part involved six questions about ICT skills and knowledge, the second part present six questions about assessing education of ICT and the last part ask five questions about effect of ICT on information retrieval.

Data collection conducted at the end of the second semester in the 2008-9 academic years. Students from the second, third, fourth, and fifth year were asked to complete the questionnaire. Participation in this study was voluntary, and all participants remained anonymous. The data were processed and analyzed by the Statistical Package for the Social Sciences (SPSS PC Version15.00).

DISCUSSION

Globalisation and ICT is now impacting on the lives of many people from oral traditions (11). ICT has the potential to “bridge the knowledge gap” in terms of improving quality of education, increasing the quantity of quality educational opportunities, making knowledge building possible through borderless and boundless accessibility to resources and people, and reaching populations in remote areas to satisfy their basic right to education (12).

To date, many initiatives in ICT for education in developing countries have been limited to increasing information access for educational institutions in general and specifically for teacher training, aimed at using ICT-based resources and tools in the classroom (12).

ICT provides opportunities for students to work individually or in small groups at their own pace rather than working in unison material at a pace set by the teacher (13). Computers and the Internet are revolutionizing the process of education at all levels. Not only are computers becoming a key tool in the educational process, they also make education available in places and at times in which it was previously inaccessible (14).

In almost every Eastern country, there are special governmental agencies responsible for the planning and management of ICT in schools. In China, it is the system of educational technology centers that governs the planning and development of ICT in K-12 education. In Japan, the Center for Educational Computing was set up to promote the use of computers in schools. It is jointly controlled by the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Economy, Trade and Industry (15).

In Singapore, the Master plan for Information Technology in Education is a blueprint that includes four key dimensions: curriculum and assessment, content and learning resources, physical and technological infrastructure, and human resource development. South Korea implemented its first Master Plan for ICT in Education during 1997–2000, focusing on installations of basic infrastructures (e.g., hardware and software) and professional development of teachers.

Thailand is implementing its National ICT for Education Master Plan, focusing on the development of ICT infrastructure, professional development and improvement of learning and administration (16). Similar studies in Nigeria, India and Tanzania in 2003 and 2004 showed a similar uptake and comfort with technology compared with the current study in reference to internet use and communicating by emails. This is due to the fact that the use of emails for communication and the internet to search for information and to do research has become critical to their studies.

Students are encouraged to read published research papers online and dedicated health-related websites as supplements to their studies (17).

Wilson et al. at their research in 2009 raised that measures of the experience and attitudes of healthcare students toward the increased use of e-learning requires development in line with computer and technology advances. Continued expansion of web-based learning at all levels, the mobility of the healthcare workforce and the need for this workforce to have flexible modes of continued education mean that it is imperative to develop and validate instruments to explore students’ experiences with e-learning and to develop models for engaging students in e-learning (18).

South Australian rural and remote schools have been using a variety of Information and Communication Technologies (ICT) to enhance curriculum opportunities for students whose teachers are at a different campus or different school, or who are out of the school for extended periods of time undertaking courses, such as, Vocational Education and Training (19).

Another survey, on all undergraduate dental students at the University of Oulu, Finland, was conducted during the spring term 2000 shows that e-mail and WWW have been widely adopted for both private and educational purposes by dental students in Finland and are employed together with WWW-based medical and dental publication databases (20).

CONCLUSION

This self-report study was conducted to evaluate dentistry student's attitude toward information literacy. Totally 150 students were solicited to complete a questionnaire but just 86.6 percent of questionnaire were completed and gave back to researchers.

In the present survey %80 of students were able to employ word-processing software and %91.5 could copy a file from source directory and paste it on destination directory. This study found that %80 of user was familiar with PowerPoint software for educational purposes. Results indicated that %26.9 of students can identify the Graphical File Format (GIF) while %66.2 were unable recognize it. Just 30% of the respondents received educational electronic materials, this reports indicated that lack of ICT courses and workshops cause incapability of students to identify the file formats. Within these students just %33.8 could define the file format and knew what software is appropriate to open the file. %26.9 was familiar with FTP services which are used to transfer data through the internet. About %70 of student report they didn’t receive any electronic material education (tab1), whereas %66.9 could send an email to their faculty and could read received email in their inbox (tab2). In spite of containing fundamental of Information Technology in curriculum of first semester of dentistry in Iran, major of students
5.3.4. REFERENCES

Table 1: Received educational electronic material

<table>
<thead>
<tr>
<th>Educational materials</th>
<th>frequency</th>
<th>percent</th>
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<td>30.0</td>
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<tr>
<td>No</td>
<td>91</td>
<td>70.0</td>
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Table 2: Sent/received e-mail from faculty teacher

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<td>No</td>
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Table 3: apply Google search

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<tr>
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<td>19.2</td>
</tr>
</tbody>
</table>

Figures:

- Fig1. Between entry years and usage of Web-based resources

- Fig2. Apply Pub Med database