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The European computer driving licence and the use of computers by dental students

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Abstract

The use of computers within the dental curriculum for students is vital for many aspects of their studies. The aim of this study was to assess how dental students who had obtained the European computer driving licence (ECDL) qualification (an internationally-recognised standard of competence) through taught courses, felt about the qualification, and how it changed their habits vis-à-vis computers, and information and communication technology. This study was carried out as a descriptive, one-off, cross-sectional survey. A questionnaire was distributed to 100 students who had successfully completed the course, with questions pertaining to the use of email, word processing and Internet for course-works, Medline for research, computer based learning, online lecture notes, and online communication with members of staff, both before and after ECDL qualification. Scaled responses were given. The attitudes of students towards the course were also assessed. The frequencies and percentage distributions of the responses to each question were analysed. It was found that dental students who follow ECDL teaching and successfully complete its requirements, seem to increase the frequency with which they use email, word processing and Internet for course works, Medline for research purposes, computer based learning, online lecture notes, and online communication with staff. Opinions about the ECDL course varied, many dental students finding the course easy, enjoying it only a little, but admitting that it improved their computer skills.

Introduction

The use of computers and information and communication technology (ICT) is becoming increasingly necessary in education. Many dental schools assume that students already know, or can learn computing and ICT skills in their own time, whilst others incorporate relevant teaching within the dental curriculum. There seem to be significant inequalities regarding the educational use of computers within dental schools, in spite of efforts towards curriculum uniformity by the European Union and the Dented project (1).

An internationally-recognised standard of competence, the European computer driving licence (ECDL), is one possibility of providing dental students with adequate basic knowledge in computing and ICT. Its completion certifies that the holder has the knowledge and skill needed to use the most common computer applications efficiently and productively. The ECDL consists of seven module tests which lead to qualification, taking approximately 45 min each; the pass mark for most modules is 80%. The seven modules are: basic concepts of information technology, using the computer and managing files, word processing, spreadsheets, databases, presentations, information and communication.

Materials and methods

This study was carried out as a descriptive, one-off, cross sectional survey. A questionnaire was distributed to 100 undergraduate dental students, having successfully completed the ECDL course, during the academic year 2002–2003. The questionnaire was divided into four parts. In the first part, demographic characteristics were recorded. The next two parts consisted of six questions about the use of ICT before and after ECDL qualification. The questions pertained to the use of email, word processing for course-works, Internet for course-works, Medline for research, computer based learning or online lecture notes, and online communication with staff. Scaled responses were given based on the frequency of use. The last section obtained opinions from the students regarding the difficulty, merit and enjoyment of the ECDL course. A section was also available where students were invited to write any additional anonymous comments.

Results

A 72% response rate was obtained. Regarding changes in habits following ECDL qualification, 29% of students increased their

frequency of email use, 22% increased their use of word processing for course works, 86% increased their use of Internet for course works, 79% increased their use of Medline for research purposes, 97% increased their use of computer based learning and online lecture notes, and 33% increased their frequency of online communication with staff.

Opinions about the ECDL course were variable. Sixty-nine per cent of dental students found the course easy, 25% found it mediocre, 4% difficult and 1% very difficult. Eighty-four per cent of dental students enjoyed the course a little, 6% enjoyed it moderately, 6% very much and 4% none at all. Finally, 58% of students thought the course improved their computer skills a little, 36% moderately, 3% very much and 3% not at all.

Discussion

This study constitutes a preliminary assessment of how ECDL affects dental students in their habits concerning computers and ICT, and their attitudes towards ECDL. It presents a primary evaluation attempt of a model for dealing with dental students' computer literacy problems, based on implementation of ECDL in the dental curriculum. The results suggest that ECDL qualification, offered as part of the dental curriculum in the second year, seems to provide many benefits for dental students.

The extreme variation in the computer competency of students constitutes a challenge, where the use of ICT is incorporated in the dental curriculum (2). The ECDL may be able to overcome this problem because those already competent enough can sit and pass the examinations whereas those who need to follow courses can do so. Irrespective of baseline computer skills, however, it has been reported that the time saved over a year since completing the ECDL, was greater than the time invested in obtaining the qualification (3).

Our findings indicate that habits concerning the use of computers and ICT change following ECDL qualification. In spite of this, ECDL teaching may not be entirely responsible for these changes. Time may also play a role, in that as students progress in their dental studies, they increase their use of computers and ICT because of the various curriculum demands such as projects, course works and examination preparation. It was previously observed that 80% of dental students did not use computers regularly in the first 2 years of the course, but 75% did in their final year (4). Other confounding factors may be participation in other ICT or library courses, self help, and teaching from fellow students.

Interestingly, the aspect of computers and ICT which most increased following ECDL qualification was the use of computer based learning and online lecture notes. It has been suggested that students easily adapt to computer assisted learning although their current computer literacy is still low (5). There is a general awareness in Europe of the need to exploit computer based teaching in dental education, but to date deans of European dental schools have placed little priority on this (6).

There is certainly much to be investigated in this area. A more accurate way of assessing students' use of computers and ICT following ECDL qualification is to measure it prospectively. This is planned for a future study, which would help clarify the actual impact of the ECDL course, as well as potential for improvement. As students come with a variety of expertise but also attitudes towards computers, these factors would ideally be incorporated in the variables to test in future. It would also be interesting to repeat such a prospective study after a few years and compare findings, giving us an indication of how dental student computer competency is changing over time.

Conclusion

Dental students who follow ECDL teaching and successfully complete its requirements, seem to increase the frequency with which they use email, word processing and Internet for course works, Medline for research purposes, computer based learning, online lecture notes, and online communication with staff. ECDL was found to be advantageous especially for beginners needing most improvement in computer literacy, while providing some new knowledge also for those already possessing a more advanced level of computer competence. Opinions about the ECDL course varied, many dental students finding the course easy, enjoying it only a little, but at the same time admitting that it improved their computer skills.

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