Minimum computer literacy at tertiary institutions – who’s responsibility is it?

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Abstract

The widespread use of information and communication technology in education and in the community has led to a higher expectation of prospective students’ level and type of computer competency. Currently, most higher education institutions in Australia do not require a minimum entry requirement in computer skills. This applies even to computing degrees. For most undergraduate degrees, entry depends on students meeting the minimum TER (Tertiary Entry Requirements) score of the respective degree including passes in English and Mathematics. Lecturers, especially those lecturing in first level programming subjects, cannot assume any prior computer knowledge for either on-campus (full-time) or distance education (DE) (part time) students although many of the latter courses are frequently highly dependent on computers. This paper focuses on the difficulties facing teachers in the higher education sector, most notably due to the variable computer abilities of students coming in to tertiary institutions, the issue of equity and resourcing, and special issues related to mature age students.

INTRODUCTION

The use of information and communication technology (ICT) is becoming more widespread in education and in the wider Australian workforce and community (Australian Education Council 1990, Australian Government Publishing Service, 1997). There is an assumption that school leavers are a generation of computer literate individuals but the level of skill is not uniformly high (Meredyth et al, 1999, Lim and Lee, 2000).

This paper focuses on the difficulties facing lecturers in the higher education sector, most notably the variable computer abilities of students and their differing access to computer facilities. Four main questions were analysed:

1. Should there be a minimum tertiary entrance computer ability requirement?
2. Should higher education or secondary education be responsible for a minimum standard of computer skills?
3. What are the implications of this in terms of equity and resourcing?
4. How would this effect mature age students?

1. Should there be a minimum tertiary entrance computer ability requirement?

A decade ago the introduction of minimum compulsory formal school based computer courses was not considered urgent. However, in this Internet age, there seems to be a clear and widespread agreement among the public and educators that computer usage for a range of learning tasks is now as much a part of a student’s basic learning toolkit, as taking notes or reading texts though computer competency requirements may vary from discipline to discipline. A proposed computer competency course could include topics like basic computer concepts, use of basic application packages and tools, and basic knowledge of the Web or the Internet. This is in line with the syllabus used in the International Computer Driving License Scheme (ICDL) introduced to Australia in 2000 by the Australian Computer Society (ACS).

Whatever the reasons, schools and universities have to deal with the current reality and must work towards removing it as an issue. Therefore, the answer to the above question is – Yes, there should be a minimum tertiary entrance computer requirement although obtaining a consensus among the universities would almost be impossible to achieve.

2. Is it the responsibility of higher education or secondary education to equip students with a minimum standard of computer skills?

Where does the responsibility lie? This is contentious issue. It is too late for students and irresponsible of secondary schools to shift the responsibility to higher education institutions. It is the responsibility of secondary education to equip students with a minimum standard of computer skills, with optional of a higher-level courses for students keen on pursuing a computer-related tertiary programs. The government must ensure that there is a consistent long-term policy on objectives of information technology in secondary schools. Tertiary institutions,
generally better equipped in terms of physical, financial and academic resources, should be responsible for identifying the need for generic computer literacy training for all commencing students.

University lecturers must not assume any prior computer knowledge among students involved in first year programming subjects. However, lecturers could quickly bring up to speed the computer background knowledge required within the first two-three weeks, thereby satisfying the needs of the majority of the students.

3. What are the implications of this in terms of equity and resourcing?

It might not be possible for every secondary school to have adequate resources to provide students with the minimum standard of computer literacy skills. The government must ensure that there is a consistent funding policy for IT in secondary schools. Again the minimum standard is often not static. It changes rather quickly. The goal posts keep shifting. Topics like multimedia and Internet were not even thought of until a few years ago. Few schools would have teachers proficient in the newer applications of computer technology. Hopefully, tertiary institutions can do the rest.

4. How would this effect mature age students?

Mature age students cannot be assumed to have prior knowledge or exposure to computers at either primary or secondary schools although a significant number of the working adults could be highly computer literate. Those who have no prior computer knowledge and who would have not undertaken any computer literacy classes could experience anxiety (Glass & Knight, 1988). A separate program for these mature age students would provide the lecturer with more opportunity to cater for individual needs, although this would only be appropriate for on-campus students. Alternatively, incoming students could be provided with a WebCT CD-ROM and/or on-line computer literacy program. Many universities have adopted this approach.

CONCLUSION

The questions posed do not seem to have a simple answer for secondary and tertiary students as far as computer training is concerned, although there is agreement that tertiary students require a basic level of computer competency. How this competency is achieved is still open to debate. In an ideal world, students would all enter tertiary institutions with well-developed skills in reading, writing, critical analysis, basic mathematics and computer applications. However, the reality is that with a very broad spectrum of secondary schools, some schools prepare students very well whilst others do less well. There are a few affluent, well-resourced private schools where IT is well integrated into the curriculum and skills are well developed. This contrasts with some less affluent, government schools that struggle for resources. Given that not all secondary schools are likely to receive a massive boost in funding in the near foreseeable future, it would be hard to mandate yet another tertiary entrance requirement that could further marginalise less fortunate secondary school students.

One solution is for tertiary institutions to become more sensitive, sympathetic, and aware of the varying degree of ability of prospective students and provide a range of specifically tailored bridging courses, on-campus or on-line, for the various student cohorts including mature age students. Indeed, this appears to be a common approach taken by most universities. Perhaps our questions cannot really be answered. If it is accepted that it is the responsibility of the tertiary sector to provide computer education to new students, this could potentially be interpreted as relieving the secondary school sector of its duties in this area. Perhaps it should be seen as a shared responsibility.

REFERENCES:

Australian Education Council (1990) A National Statement on Mathematics for Australian Schools Carlton (Vic): Curriculum Corporation (Australia)