NEW UNDERSTANDINGS

The theme for this issue, *New Understandings of Computer Education*, has allowed us to explore at least three distinct areas:

- the role of programming languages in computer studies courses;
- patterns of anxiety arising from the classroom use of computers in different curriculum domains; and,
- using computers in a combination of 'tool' and 'tutor' modes.

Roschelle's article, 'Spreadsheets in Boxer,' and the article by Newlands and Teague, 'C as a first programming language,' address the first of these. It seems that teachers of computer studies are frequently challenged to select or defend the selection of a programming language for their courses. Not only are there a number of competing design methodologies and a plethora of choices, there are new developments such as object-orientation, visual programming and intelligent development systems to contend with. To chart a path through this maze requires one to reconsider the motivations for including programming as an activity within computer studies (and more generalist) courses. Depending on the situation, these might include:

- acknowledging that principles of programming remain a core element in computer science;
- vocational reasons; and,
- a constructivist orientation to the understanding of computer systems.

Roschelle presents and argument that Boxer, with its embedded and powerful design principles, is an ideal choice over competing languages. He provides us with examples that not only demonstrate Boxer's features, but also address some key ideas from computer science.

Newlands and Teague adopt a different, more vocationally orientated approach. Following a review of their first-year university course, they argue a case for moving away from Pascal to C as the implementation language. Their arguments are based on historical and vocational factors with some comparison (like Roschelle) of the different languages. Interestingly, they describe other factors that they believe are important for the success of such a course: well managed, structured and practical laboratory work; and, the separation of program design from implementation.

In 'Getting anxious about electronic learning,' King presents a study that sought to reveal patterns of anxiety among primary school students in relatively well supplied computing environments. His sobering conclusion is that the provision of more computers may adversely affect student anxiety. He contends that it is an important one. King also highlights the importance of an adequate teacher preparation and training by establishing a link with student attitudes.

Sinclair revisits the traditional way of describing computer roles in education, in particular the roles of 'tutor' and 'tool.' He suggests that we often view these roles as being disjoint and in a sense opposed to each other. However, from the results of his longitudinal study, he suggests that we should consider an approach which reconciles the two. Using software which targets early literacy skills in both tutor and tool modes, King reports successful outcomes using a range of qualitative and quantitative measures.

THEME FOR VOL. 9 NO. 1

As teachers using computers, computer studies teachers and computing professionals emerge as distinctive groups within our society, the question of ethical practice becomes more prominent. We are finding that past practice and laws based on material possessions are difficult to translate to a society which has information as a central commodity. It is clear, for example, that ownership of an idea is different from ownership of an object. Yet material metaphors abound, leaving laws and acceptable practices in a state of disorder. Ethical standards (to practice, to model and to teach) may be the keypost that we require to function. But what ethical standards should we adopt? How should we approach the fostering of standards in our students? What information-based ethical standards should apply to organisations and nations? If you have answers, ideas, or questions on any of these points why not contribute to our first issue in 1994?

OTHER MATTERS

The next volume should bring some changes to the appearance and content of the journal. We are hoping to improve the layout, some of the styles and the grade of paper used. Any constructive comments regarding present arrangements would be appreciated by the editorial panel.

The journal will also continue to be published electronically. Apologies for omitting the FTP address in the last issue. It can now be found on the contents page.