

Computing and English: a contradiction?

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A deep conversation at the computer education co-ordinators seminar:

Maths Ascii Ram configuration screen!

Science Well that may be so. But MS-DOS CPM drive kilobyte turbo pascal interface port.

Maths I find that hard to believe! Because Rom shunt expansion basic, then boot hard disk modem peripheral megabyte.

English (who has been nodding his head at appropriate intervals so as not to appear completely stupid). Some of the students at our school have megabytes on their necks, especially after weekends. (He grins)

Maths and Science glare coldly at him. As English wanders away to find a piece of dried-out raisin bun, Maths mutters something to the effect that English computer co-ordinators need reprogramming.

As one of the very few computer education co-ordinators whose principal teaching subjects lie in the English and Humanities areas, I am very aware of the degree to which teachers in those subject areas have been made to feel that computers are not applicable to those teaching fields. The conversation above does have some basis in reality, reflecting as it does my impressions of seminars which I attended at the beginning of my term as computer co-ordinator.

Historically, the areas of the curriculum which have taught 'computing' have been maths and science. Computers and the understanding of them has been an esoteric and arcane preserve of mathematicians and scientists. As a corollary, the curriculum which has been developed has been based on programming languages, to be studied as part of the status subjects of Maths 2 and other 'higher level' courses.

The advent of the microcomputer — the powerful personal computer which is slowly becoming accessible to all — is changing the nature of the computer curriculum. To an increasing extent, computers, like other instruments of technology, are coming to be recognised as tools. Their usefulness lies in their ability to perform a task more effectively than other technology. It is as tools that computers are important in the subject English. It is the word processing software which is available for computers that each pupil in English needs to make writing an enjoyable and less tedious subject.

Teachers of English, like their colleagues in some other subjects, often have a vague suspicion of computers. In some way they represent a technology over which there appears to be little control. Yet cars, when they first appeared,

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scared the populace. Over time, however, the car has become an accepted, indeed a necessary element of western life.

It is not necessary to have knowledge of how the car works to be able to drive one. It is not necessary to know the theory of the internal combustion engine to be able to use the car to get from one place to another. Similarly, it is not necessary to know what binary code is before the computer can be used. To carry the analogy further: the advent of the car created a certain freedom, a certain mobility, for many people. The computer will do the same. To be sure, just as the car has negative aspects, so too does the computer. But as with all technology, the way in which it is used is an issue concerning all in the society.

One of my radical year 12 pupils wouldn't touch computers because they were associated with the ideologies to which she objected. But there is little doubt that the ideology of Marx to which she subscribes would be almost inaccessible to her without advances in technology which made it possible to produce books on a mass scale. It is no paradox that a recently-launched magazine of 'greenie' orientation was apparently written, and the layout and graphics produced, on a computer similar to an Apple Macintosh. The computer acts as a word processor, allows for easy editing, and compiles the headings, graphics, page numbering and layout.

The software needed for useful applications of the computer is readily accessible. The use of computers running such software reverses the specialization implicit in the industrial era.

It can be threatening to sit in front of a blank screen and a keyboard wondering what to do. It's frustrating to press a key and find that everything disappears and the means of getting it back is not known. It's unsettling to sit in front of something which has been promoted as being in some way intelligent and not be able to make the thing do the things it is supposed to do. But once the fundamental functions are known, the frustration and fear dwindle in proportion to the growth of mastery over the technology.

Liberation from drudgery

How many times has it been said to children that they should first write a draft of an essay or letter or whatever and then, at the simplest level, check it for mistakes before rewriting it? At the more complex level, pupils in the senior classes are exhorted to make more substantial changes to ensure fluidity and logical coherence.

I first heard such exhortations as a pupil in high school a few decades ago. I didn't take a lot of notice, because when I did try it, the correcting of mistakes became so cumbersome that it simply wasn't worth the effort. The rewriting was so tedious that the final product, although far better in appearance, never seemed to be as good as I wanted it to be without major reworkings. This situation applied right through my long part time efforts at university until 1985, when I was liberated by the discovery of the word processor. No longer was my folder of notes for the latest assignment crammed with pieces of paper in crabbed longhand with all types of marks on it indicating that a paragraph

fitted in this space here; the paragraph was to be found 15 pages further on surrounded by other such sentences and paragraphs. No longer did I have to sit poring over the ancient manual typewriter trying to get a final perfect copy, and then finding that I'd forgotten a couple of sentences on page 1 which required a retype of pages one, two, three and four so that all the information could be included. I said goodbye to the liquid paper and the numerous lumps which it left on the paper.

My own experience showed that the word processor would convert pupils from becoming proficient in the art of copying long portions of text to becoming proficient in the art/craft of writing; in the art/craft of establishing meaning both for themselves and the reader. The word processor allows that meaning to become clearer through the ability to change text without creating time-consuming copying exercises. Because of this liberation, the word processor empowers pupils to be able to clarify their own thoughts, to give coherence to those thoughts and develop them so that their writing truly 'means' something to someone else.

'Process' writing (the school curriculum once again reflecting the notion of the assembly line in its terminology) can become a reality without the emphasis, in terms of time used, being on 'writing'.

All very well. But this scenario is only possible when all pupils have access to a microcomputer for a portion of the school time. In Queensland, schools have been provided with computers so that specialised computer rooms can be set up and accessed by class groups. In addition, there is no doubt that microcomputers will be an integral part of many households in the not-too-distant future. The humble game-playing Commodore is capable of supporting simple word processing packages. Already pupils in year 8 are handing in material compiled on the word processor.

And what joy for the teacher to be handed in a piece of work which is legible, which has neat margins, which the pupil can correct and rewrite with a minimum of effort. What joy for the pupil to be able to be liberated from the bondage of poor handwriting which counts for so much in so many of the school curricular activities.

It's also possible to run the document through a spelling checker which marks words which appear to be misspelled. The argument against this is that pupils will then not learn to spell. The argument is not able to be supported because of the following:

Most spelling checkers will only pick up words which have been misspelled. They do not provide the correct spelling. Hence the pupil has to find out the correct spelling by using a dictionary. This is a far better method than having the work being handed in for the same process to occur.

The spelling programs will not pick up words which are spelled differently in different contexts. The pupil will have to know when to use 'to', 'two' and 'too', although the computer will be able to recognize that 'ot' is incorrect. Yet it will not recognize that 'tow' is incorrect because 'tow'

is a legitimate word. Once again, the computer is a tool rather than a teacher or examiner.

Thesaurus disks are available which make it possible for the budding writer to choose which words would be most appropriate. Such a thesaurus is no different from a book, except that it is on a disk.

A recent software package, *Turbo Lightning* is the most comprehensive spelling checker and thesaurus program yet available. The dictionary and thesaurus reside in the memory of the computer checking each word as it is entered and providing synonyms for a word when requested. The program works on the sound principle that people will recognise the correct word from a list although they may not be sure of the spelling when typing the word.

Desk Top Publishing

Desk top publishing has already been mentioned. Essentially, desk top publishing means that the whole product can be designed at the one place on one computer. At the present time, this niche in computer hardware is dominated by the Apple Macintosh, although the Commodore Amiga will provide stiff competition. The 16-bit IBM compatible machines provided to Queensland secondary schools do not have software which is capable of the same degree of control over the finished product.

Desk-top publishing is a computer application which will herald vast changes to the publishing field. School newspapers and magazines are obvious applications. Text can be written, headings designed and layout arranged complete with graphics at a single computer. If a laser printer is used, the final copy is indistinguishable from a professionally produced publication. Non-computer designed artwork and photographs can be physically added. All that remains is the printing of the magazine or newspaper.

The software described below is not in the realm of desk-top publishing, as it has limitations on the degree of control which can be exercised over the final product. However, the simulations are useful in themselves.

School broadsheets

There are certain programs which allow for simulation of newspaper production, such as *Newsroom*.

These programs simulate the production of newspapers, but in broadsheet style. Pupils write articles, editors edit them, photographers 'take' photographs which can also be edited. Layout can be determined according to the importance of the stories, graphics added and print styles chosen. The finished article is superior in quality to those which are only typed. The program allows for a flexibility in design which is impossible to achieve through other means. At the same time, pupils become aware of the processes of newspaper production and can achieve some control over the finished product. Such control is not available in traditional methods of newspaper production at the school level.

School magazines

School magazines have often been the responsibility of the English

department. Letraset characters, as well as lines, curves and designs, while creating a beautiful finished product, are labour and time intensive, requiring repetitive and often boring processes.

Yet there are software packages which allow for the design of pages using all these graphics elements. A 'mouse', running from software such as PC Paint, will, in the hands of an experienced graphic artist, create an extraordinary range of page designs which are easily reproducible and can be used as the basis for the design of other pages. Computer assisted artwork can be integrated into the page, or traditional artwork can be attached through the traditional cut and paste method.

Two of the problems associated with dot matrix printing are that it does not have proportional spacing nor do the letters produced on a dot matrix printer have very good resolution. Obviously this is a disadvantage because copy then has to be retyped. This problem is, to a large extent, able to be solved through printing software such as *Letrix*. This program will print the particular text in different fonts, which the user can choose. Within the text itself, fonts can be changed. Other fonts are available for headings and titles. Proportional spacing is an advantage. The letters themselves do not have the appearance of dot matrix formation.

The important point is that computers offer a degree of control and variability over the finished text which has not been possible using traditional forms of writing and producing. This flexibility allows the user to decide how the finished article will look through the choice of headings, fonts, and layout. Any one of these three elements can be changed without major re-typing. Of course, flexibility within the text itself, that is, editing procedures, are also reduced to a simple task.

Interactive programs

Computers and computer software can also play an interactive role with the pupil; that is, the pupil can answer questions which the computer then assesses and rewards the pupil with appropriate praise, or asks that the particular exercise be tried again. These interactive games are, I believe, counter-productive. They are based on the behaviourist notion that people react like Pavlov's dogs; they are rewarded for pressing the right keys. These programs place the computer in a position of power over the pupil, deciding what is right and what is wrong. The pupil submits to the 'intelligence' of the computer. There is no interaction in the sense that choices are canvassed and discussed for weaknesses. The computer praises the pupil for making a correct choice — but how valid is it for a machine, albeit a sophisticated one, to be making comments about pupils, no matter whether the comments be positive or negative? Computers are not yet intelligent, they cannot think for themselves and can only match input against pre-programmed data.

For the teacher

Computers are not only tools for students, but also for teachers. One of the most time consuming tasks for a teacher is the recording of marks which, in

many school systems, have to be added, values have to be changed because of weightings accorded a particular piece of assessment and some kind of rank order needs to be produced. Notwithstanding that the ideology behind such practice is open to question, such procedures have to be followed in many systems.

The final compiling of marks is a tedious and time consuming process. The marks of each pupil have to be processed, often using a calculator. The same formula has to be used on the marks of each pupil. With an electronic spreadsheet, such compilation of results is made easy. A formula can be entered for the first student's marks and can then be automatically copied to every other student. The computer works out the final results for the class in a few seconds.

Units of work can be easily written on a word processor and changes can be made to the unit without extensive re-typing. The theory stating that activities undertaken in classrooms need to be changed according to both the lessons learned from past practice and the needs of the students can be put into practice without the creation of time consuming exercises for the long-suffering body in the English Department who can type and/or put together an attractive unit.

Communications

Teachers are a group who remain isolated from each other in most working activities. It is difficult to be aware of the resources which are being used by a teacher in another part of the state, or in another part of the country. Communications via computer could play some part in ending this isolation.

In English, a bank of units which have been used successfully by other teachers could be stored. Access to this bank would require, apart from a computer and modem, a simple telephone call to access the data bank and retrieve the particular unit. (Note how the verb 'access' has become transitive. Has computer technology caused this change?) The unit can be easily changed by the user to suit their particular needs.

Such a conception is not in the realm of fantasy. Schools are already buying the storage disk (called a 'hard disk') in order to set up electronic bulletin boards for school computer users. The computers at either end of the communications link do not have to be compatible.

Conclusion

It is difficult to see how the computer would ever replace the teacher. With some luck it might replace the less desirable pupils. It will, I believe, continue to be a tool and a resource which might go some way to improving the quality of English education and to assisting the teacher.

Programming languages of the future will be based on the rules of language. In contrast to Basic, Pascal, Cobol and other currently-used languages, *Turbo Prolog* is based on the language system. Having had little experience of programming, I can only suggest that the new-generation languages will require a knowledge of English and logic rather than the understanding of mathematical

concepts. Perhaps it will be necessary for the computer programmer of the future to have an understanding of languages rather than a knowledge of maths.

There are many applications of the computer in English. Those which are covered here represent only a small proportion of the possible applications. The subject English has perhaps been slow in coming to grips with the new technology, but the applications in English are probably greater than those in other subjects.

Readings

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