**INTRODUCTION**

When people hear that I have won this award they seem interested to find out what makes a Computer Educator of the Year and maybe to pick up a few tips. In fact I see myself as a fairly ordinary person, even boring at times. I love my work and sometimes even feel holidays are an intrusion. Did I say I was boring? Possibly weird is a better description. Anyhow, I must be doing something right if my peers see fit to give me this award and I will attempt to discuss some of these ideas in this article.

Firstly I will tell a little about myself and my background. Then I will describe the situation in the school where I teach as far as computer education is concerned. Finally I will attempt to outline something of my philosophy of teaching that I have developed over the years.

**ABOUT ME**

Where I started

I have been teaching in Queensland state high schools for nearly 30 years. For nearly 28 years I have been at the one school. Some might describe this as stagnation but I prefer to think of it as stability. Much of this time I have spent teaching in the maths/science area specialising in biology and physics. I drifted into computing about 10-years ago when one day a little Apple IIe arrived at the school and I was curious about what it could do. It was not too long before I was able to program in BASIC and away I went. I managed to produce a few useful programs to help with teaching mathematics and physics. These included a utility to produce linear and quadratic graphics for teaching junior mathematics classes. This was a primitive version of Capgraph. The physics programs were simulations of experiments in atomic physics and collisions in two dimensions. I found it was also helpful to come up with ways of using the computer for administration work in both the main administration as well as in the subject departments in the school. Because of this, the administration responded by releasing me from some of my teaching load and this gave me time to develop some of my ideas for computing in the school.

What I do now

I was eventually converted to IBM when our Department of Education supplied us with a laboratory of Sperry computers. Would you believe they are still working after about 7 years and are well used. Things have changed rapidly since then. I now teach two computer classes for 10 periods a week. I divide the rest of my time between helping other teachers to grapple with the complexities of computer education, looking after the administration systems, installing new hardware and software and fixing things. The fact that I make myself available when help is needed is one of my reasons for success. If you can get someone over a hurdle quickly then they do not reach that frustration point and give up. I always try to identify the problem clearly and make sure the person understands it as well so they can cope by themselves if it arises again.

I carry the title of computer coordinator at the school and enjoy the work very much especially when I see people gaining confidence in using computers and becoming independent. My expertise is often sought by people outside the school with parents calling to discuss the use of computers at home in particular the choice of hardware and software. I also have calls from other schools...
with similar inquiries. I am happy to help as much as I can to develop the use of computers around us.

ABOUT MY SCHOOL

School district
Cleveland High is a large school with about 1350 students and it is situated east of Brisbane in a rapidly expanding urban area next to Moreton Bay. When I first started there in 1965 it had only 400 students and it was surrounded largely by farms which produced fruit and vegetables. There are still a few farms about and the school even still has a large agricultural department.

School hardware
Because of the school’s size we are able to offer a wide range of subjects including a number in the computing area. The school has been able to acquire over 100 desktop computers and about 40 laptops. The desktops are housed in two general purpose laboratories, a commercial laboratory, a music laboratory and a resource centre in the school library. The general laboratories are operating under a network system using Lantastic.

Senior computing
In the senior school, we offer two computing subjects. These are Information processing and technology (IPT) and practical computer methods (PCM). The first subject has a course which can lead students to computer science at university and onto a career in computing while the latter is to teach students useful ways of using a computer at school, at home and in their daily lives. As well as these formal courses we are trying to integrate the use of computers into as many subject areas as is appropriate.

Practical computer methods
The two classes I teach are PCM. I find this useful as I have the freedom to experiment with ideas and also I can use it as a good testing ground for new software when it arrives. We are able to do this because the syllabus for PCM is very flexible and it is not a board subject.

Junior school
We have a number of programs in the junior school which include word-processing in year 8 English, database work in year 9 social science and some spreadsheets in year 10 mathematics. These usually run for 2- or 3-week blocks.

Also our manual arts department is doing work in CAD and CAM from years 9 through to 12 while the art department is developing the use of computers in the graphic design area.

The commercial department has a course covering years 9 to 12 where students work through the different levels of word-processing and desktop publishing using mainly WordPerfect 5.1 and PageMaker. Accounting students work with spreadsheets and other accounting packages.

Over in the music department students learn something of the art of MIDI interfacing and also do some composing using some of the interesting software designed for this purpose.

Learning Support Unit
Another area in the school where computers are expanding is what we call our Learning Support Unit. This provides help to students who have learning difficulties and there is a wide variety of software around which we are trying to put to use in this area. We see the computer as a good motivational tool for these students.

LIBRARY ELECTRONIC RESOURCE CENTRE
Our latest effort is the resource centre in the school library. It is becoming more obvious that information we once found in books is being stored electronically and students need to be able to access this. We have set up a number of computers which contain programs such as PGLOBe. Also we have installed two CD-ROM players, one with multi-disk facility and we have acquired a number of CD-ROMs such as Mammals, Grolier’s Encyclopedia, Encarta and Musical Instruments. Because of the limited access to these CD-ROMs at the moment, it is planned in the near future to network the computers in this area.

Telecommunications
We also have a modem attached to one computer giving students access to online data information sources using the Information Access Network and Keylink. I am still trying to get people to be involved in the Oz projects scheme. There seems to be some barrier to this despite having all the technology in place and it being accessible. It is probably a matter of finding the time to get involved. We see this whole centre in the library growing and becoming a significant part of the school’s resources.

MY PHILOSOPHY
The first point I would like to make is that I love teaching. I wanted to be a teacher since I was in primary school and I just could not see myself doing anything else. My greatest thrill is when I am working with a student or a teacher who is struggling with an idea and then seeing that light of understanding come on as they grasp what I have been on about. I think most teachers can relate to this experience and I know that it makes up for the constant struggle we have with unwilling students who do their best to disrupt our classrooms.

Apprentices
Secondly I like to use what I call the apprenticeship system or what some call peer tutoring. By this I mean that I teach someone how to do something then I encourage that person to go on and help someone else who encounters the same problem. This has many benefits. One is that it spreads the work around saving the need to have to deal with every difficulty yourself. Also it helps to reinforce the concepts in the mind of the person who is trying to help someone else. It also allows that person to experience the joy of seeing that light of understanding come on in someone else. I find this kind of approach works best in the classroom where computers have been introduced.

It is almost impossible to anticipate all the problems that can arise when you start working with these machines. This is especially true when a teacher is confronted for the first time with a room full of enthusiastic students wanting to get on to use them. I encourage students to follow the rule that they ask at least two other students in the room about any problem they may have before they approach me with it. This takes a bit of discipline to establish but it is worth the effort. You cannot be everywhere at once and students need to learn independence.
Another small but important rule I try to follow is when I am working with a student at a computer. I will never touch their keyboard. When people break this rule, the student may miss what is being demonstrated. Also there is no better way to learn to do something if you can try doing it yourself. If I feel the need to show a student what to do on a keyboard, I will name the key and point at it but not touch it. The only exception to this rule is when I see a need for the student to understand what I am doing and even then I ask permission to use their keyboard. I try to instil this rule in my apprentices as well.

I find that I work best with people on a one-to-one basis. I will often get things started with a lecture/demonstration type of lesson and there are plenty of occasions when I find that working with a small group has its benefits. But when I can sit down beside a student or teacher and interact in such a way as to provide the right input at the right time, then I feel a real sense of achievement.

This brings me to a quote I heard recently that fits nicely with this philosophy. The quote was ‘It is time to remove the sage from the stage and bring on the guide from the side.’ I find this particularly appropriate in computer education. We need to get beside those we are teaching and find out exactly what they are doing with all this interesting technology. We may be surprised at what we find. Students may be missing the point or they may be coping up with some very creative ideas that we could learn from.

Implicit learning
This brings me to another aspect of my philosophy. I see teaching with computers as a two way experience. I often learn things from my students both implicitly and explicitly. Often when I present a new unit of work I discover that students respond in unpredictable ways. I guess this is the nature of a new field of learning and we will foresee more of these situations as our experience grows. Then again the computing environment is constantly changing and we may have to accept that life will be full of new experiences. I know that I am happy to take up this challenge.

Explicit learning
The explicit aspect of learning from our students comes when we encourage them to explore the possibilities of their work. With so much new material becoming available it is hard to become familiar with every detail and if we let our students show us what they have discovered, we will be developing a team approach to the work and this makes for a better learning environment.

I don’t know if I am making any startling revelations here especially to a group of experienced educators. All I know is that this approach works for me. When I heard the news that I had won this award I was thrilled but also a bit puzzled as I felt there must be people out there doing much more spectacular things than I do. But then I realised that it is not about doing spectacular things all the time. It is a matter of teaching and doing it to the best of our ability. This is often a slow, painstaking process and the results are not always obvious but we have to keep at it, looking for ways to make that connection with the minds of our students. Sometimes we may discover a spectacular way of doing this but let’s be careful that we don’t get blinded by this discovery and lose the point we are trying to communicate.

I appreciate getting this award and accept it as recognition for my years of patient plodding as I have tried to develop the range of computer education in my school and also helping others around me. I would encourage all of you to keep working at that primary aim of teaching which is helping others to learn. It does not matter how much hardware and software and courseware we have around us, we will not succeed unless we ensure that there are things happening at the coalface. When we have achieved this, any of us would be deserving of the title Computer Educator of the Year even though we may miss out on the public recognition.

I hope you will all do the same. I believe that the ACCE conference was ‘Sharing the Vision’. I hope I have shared with you something of my vision for our work. I am afraid I do not have a great ability when it comes to crystal ball gazing. Some of us are innovators, some are educators and some are even both. I see myself mainly as an educator and I go to conferences to hear the innovators present their ideas then I can go back to my classroom and use these ideas in the way I see best. Maybe I could be described as an innovator when I take these ideas and mould them to fit my situation.

If I was pressed to name an area of computing that has the most potential in our work, I would have to suggest the area of simulation. This offers people the opportunity to do things that are impossible in the normal classroom environment. We can provide students with all the facilities to experiment with all sorts of things in the safety and comfort of the classroom. We can travel the depths of the universe or we can explore the world of the atom. We are only limited by our imagination. The field of virtual reality could play a very useful part in the classroom of the future. However I feel it will require some very creative people to produce material in this area for use in our classrooms. There is always the danger it will be treated as only a game unless it is given a direction that has educational value. I saw this danger in programs we have already such as SimCity. Not that I am against playing games. It is just that very few programs have the necessary guidance built into them to allow students to be left on their own with them. The guidance needs to come from someone who has a clear aim and is in touch with the students.

Laptops
Another fairly obvious development for the future is the use of laptops. Hopefully they will continue to get cheaper, smaller, faster and have better screens so that one day students will have a tool beside them on the desk (not unlike present day calculators) that will generate all the writing and drawing they need to do, provide all these simulated environments they need to explore, provide links to any database anywhere in the world, be used as a communication system to anywhere in the world or be used to control parts of their environment.