Who will Teach
the Teachers?

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Since 1991 Singapore has been working towards becoming an 'Intelligent Island' by the 21st century. The overall plan, called IT2000, calls for a National Information Infrastructure (NII) which will carry data and multimedia information to business and industry, government, schools, and homes (IT2000 Report, 1994). Eventually, it is envisioned that all the schools, institutions and homes in Singapore will be interconnected via a huge network, enabling anyone to seek, find, and exchange information.

The Student's and Teacher's Workbench (STW), a multimedia tool which will connect all the pupils, teachers, libraries, and schools, is being piloted now. It is intended to 'support teaching and learning by providing access to media-rich content, facilitating communication and collaborative learning, and providing students and teachers with tools customized for the learning environment of the future'. (Hu and Poh, 1994)

Are we, the teachers in the schools and the teacher-trainers in the university, prepared? And, perhaps more importantly, are we able to prepare others?

The technology is partly in place. Singapore schools which have Normal/Technical streams have been equipped with computer labs with both hardware and software to teach secondary pupils the basics of computer literacy and to familiarize them with some of the more popular software such as desktop publishing, word-processing and graphics. In addition, several of the schools have Internet access. Some autonomous schools have even more than this basic configuration, and are making full use of the multimedia capability. Many of them have set up their own Web pages on Internet, and are using networked conferencing to prepare their pupils to make optimal use of this new technology.

In a similar way, the university is well-equipped. Each faculty member and each student has access to a wide variety of software and email resources, through networked computers and labs.

But are these resources being fully exploited?

An informal survey has revealed that many of these resources are under-utilized. The majority of school teachers are only able to use rudimentary word-processing skills – just enough to prepare classroom material, such as transparencies, worksheets and handouts. Some also use a spreadsheet to input grades and have enough skills to type in the marks, though most admit to turning to 'younger' colleagues or the in-house expert. Only a few are able to access the vast amount of information available through the Internet, and none seems to be using this technology to prepare lessons or to teach.

At the National Institute of Education, the survey found that the situation is much the same. Certainly, most faculty in the 'content' and 'curriculum' areas are able to read internally-generated email messages, although only 65% of those surveyed do so daily. While 70% communicate with colleagues overseas, an equal number exchange e-mail with no one in Singapore. Fewer than 15% make use of the Internet other than to read mail – the majority claim they do not have the knowledge to do so. For very nearly 100% of those surveyed, the computer serves as an expensive typewriter and course material is then printed and distributed as it has been for years. Little use is made of the graphing, charting or graphics capabilities available through the word-processing programmes and no use at all is made of the presentation or desktop publishing packages. Almost no one outside the instructional technology staff makes use of the computer laboratories for teaching purposes. Although the central administration keeps track of student records, grades, courses, etc., the faculty rely nearly 100% on grade books or paper to track students' progress.

The trainee teachers, on the other hand, through their courses in educational technology, are taught to prepare their lessons using presentation software and a much wider selection of software to prepare their assignments – skills which the vast majority of school teachers and university lecturers seem to be lacking.

None of this is really surprising, nor should it be viewed as alarming in any sense. In the ordinary progression of educational events, information and skills are disseminated from the top down. That is, materials and techniques are developed and tested with the cooperation and input of the schools and teacher-training institutions. Trainee teachers are taught the application of these new ideas, and eventually put them into practice in the schools. New ideas in teaching take a long time to reach the classroom. Technology, on the other hand tends to move in the opposite direction: from the young to the old. Often, school pupils have a deeper knowledge of the possibilities of application of this technology to learning than do the teachers.

The results of the survey mentioned earlier bear this out. Although around three quarters of the university staff have attended 'formal' training in computer applications, only 5% of them claimed to have benefitted greatly, and few intend to attend other courses. Their dissatisfaction with this 'top-down' training is characterized by phrases such as: 'too much information given too fast', 'too difficult', 'over my head', 'not enough time to assimilate the new information'. The majority, over 95%, turn most often to younger or more computer-knowledgeable colleagues for help with very specific problems.

At the minimum, it is suggested that teachers and trainers begin now to familiarize themselves with a wider variety of instructional technology tools:

- a presentation programme, such as *Powerpoint, Compel,* or *Persuasion* can develop creativity and flexibility in the preparation of class material.

- CD-ROMs, which now contain valuable reference materials and information sources, as well as pictures, sounds, and film clips, will add interest and depth to lessons.

- a desktop publishing programme, such as *Microsoft Publisher, Publish!,* or *Pagemaker* can add realism to text layout and allow pupils more creativity in the production of their assignments.

- An Internet browser allows users to search for and retrieve relevant information from sources world-wide. Singapore is well-established on the Internet, with new 'sites' being added nearly every day. Already one can access the National Computer Board, the National Library and most of its branches, the National Tourist Board, banks, hotels, schools, polytechnics, and universities – to name a few.

While learning new applications is important, educators should also learn more effective uses for the software with which they are already familiar:

- adding graphics, tables, boxes, charts, etc. to their materials, using the enhanced features already present in, for example, *Microsoft Word.*

- spreadsheet and database programs to store student and class records, as well as calculate marks, averages, totals, etc.

- create in-house templates and forms to simplify day-to-day recording and reporting.

If, indeed, the goals of an education include the development of independent thinking, experimentation, and creativity, then perhaps it is time we began to pay attention to what the youth are telling us and make an effort to learn from them.

References

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