Teaching Computing Subjects to a Blind Student

Tay Seng Chuan
Centre for Information Technology and Applications
Faculty of Science
National University of Singapore

_____

In July 1997, an unusual girl, Miss Yeo Sze Ling, visited me to discuss the possibility of reading some modules in Computer Programming and Applications (CPA). When she walked into my office, I discovered that she was blind. I was so astonished that I was stuck for a few seconds.

She explained to me that she hoped to read our CPA modules. I though for a while. Although I could foresee the amount of trouble and extra work that would arise, I felt that she should not be deprived of the opportunity for a computer education. Consequently, I agreed to let her study and assured her that all technical difficulties could be resolved.

After she left, I started to worry about how to teach her as I lacked experience in teaching the visually impaired and there was no facility on campus for such purpose. More critically, the subject taught was hands-on intensive and it required her to use a computer. Fortunately when I called up the Society of the Blind, I was given a solution: a talking computer that was able to transform the text content on screen into speech. With immediate approval from the Physics Department and the Dean of Science, the talking computer was set up within a week.

The installation consisted of 2 screen-reading tools (SRT) for DOS and Windows environment, and a voice synthesizer. The SRT is a powerful software program that transforms a personal computer and a speech synthesizer into a talking computer for blind people. It offers a comprehensive set of tools that are needed by visually impaired to work. The features are simple. By echoing the corresponding character through the voice synthesizer as one depresses any key, the user can follow along easily while typing on the keyboard. Moreover, any visible text on the screen can be read out to the user character by character, word by word, line by line or even paragraph by paragraph. The volume, pitch, rate and tone of the voice can be adjusted to the user's satisfaction too. Another feature of the software is the reading confinement within a frame, which allows the user to zoom in the desired contents displayed on the screen.

With this system in place, I did not have any problem in teaching Sze Ling. She could read my lecture notes, tutorial and practical questions, and took her test and final examination on the talking computer. Besides working on the programming assignments, she also surfed the Internet, participated in newsgroup discussions, and communicated with friends through email. It was an enriching experience to teach Sze Ling. She topped her class of 388 students for the C Programming course in October 1997, and went on to study five CPA modules with excellence performance. Her determination has certainly made her my role model.

_____

Author's notes: Sze Ling successfully fulfilled the CPA Minor requirements in April 2000. She graduated with a First Class Honour in Mathematics in April 2001 and is now pursuing a Master's degree.