Can Computer-naive Language Teachers Build Flexible and Interactive Components for Language Courses: A Case Study

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Abstract

With the excessive use of ICT and other IT components in language courses for every levels in the past few decades, design and development of teaching and learning activities in language courses seem to be dominated by computer experts. Language teachers or instructors are either become coworkers of computer programmers, IT designers and content developers or needed to be trained as experts of IT. However, we cannot conclude that teachers are of little contribution on building and development processes of language courses in the IT world. This paper reports on the process of design and development of how a comprehensive and complicated web-based listening component for university students to enhance their language learning can be built by computer-naive language teachers.

In 2008, we launched the Professional Presentation Supporting Project. The objective of this project is to provide extra self-training materials for university students to enhance their verbal presentation skills in Chinese language. We designed, developed and delivered teaching materials, learning tasks, multimedia clips, ebooks etc. with WebCT. Further to that, ICT components like text-to-speech engine are ready on an independent server to build a content-independent listening environment. By 2011, these components are ready to run on mobile devices such as tablets and smartphones.

The conclusion of this paper is that although many language teachers are not experts in computer technology, a right choice of server, software and learning platform can mitigate anxiety of IT and also deminish the design and development time, and students can still have a flexible and interactive learning environment. It can also elevate cost effectiveness of university language courses. Last but not the least, it can help language teachers to regain control over the development of the couse and build ready-to-use ICT components that will better suit for teaching and learning.

1. Introduction

In the past two decades, use information and communication technology (ICT) as learning tools have attracted the attention of technology developers, teachers, education administrators and policy makers. (Breen *et al*, 2001)The implementation of ICT in teaching and learning had become the hottest topics in education sector. When every aspects of education sections began to embed information and communication technology in the teaching and learning process, educators have been demanded to be a technical staff. The endless pursuit of newly technologies became daily works for most teachers.

In early 2008, UNSECO released the ICT competency Standards for Teachers. (UNESCO 2008). It stated clearly that "to live, learn, and work successfully in an increasingly complex, information-rich and knowledge-based society, students and teachers must utilize technology effectively." In this document, ICT competence frameworks for teachers had been laid down in six aspects, namely policy and vision,

curriculum and assessment, pedagogy, ICT, organization & administration, and teacher professional development. In the aspect of ICT, the following skills are mentioned:

● Teachers must know basic hardware and software operation, as well as productivity applications software, a web browser, communications software, presentation software, and management applications.

● Teachers must be aware of a variety of subject specific tools and applications and able to flexibly use these in a variety of problem-based and project based situations. Teachers should be able to use network resources to help students collaborate, access information, and communicate with external experts to analyze and solve their selected problems. Teachers should be able to use ICT to create and monitor individual and group student project plans.

● Teachers must be able to design ICT-based knowledge communities and use ICT to support the development of students' knowledge creation skills and their continuous, reflective learning.

Under these descriptions, a teacher seems to be much more like a computer technician than a learning coach to facilitate students in acquiring knowledge.

To implement ICT in teaching and learning, resources were spent on teacher training and provision of hardware equipments in classroom in the past two decades. For example, In Hong Kong, the Bureau of Education of HKSAR government launched a five-year strategic plan to implement ICT in schools in the late 1998. After spending billions of dollars to purchase hardware and software, together with the compulsory refreshment courses for teachers to improve their computer competency, ICT in education seems to be dramatically improved in primary and secondary level. However, when ICT came to university level, the support was not much the same story.

At that time, lack of support was a common phenomenon in small departments in our university. For example, in our department, it was not until the mid-2000s we could afford to have a full time technician with a budget shared by two divisions. Before then, technical works were under the help of some academic staffs with computer knowledge.

Further to that, budget issue also contributed to a time leg between teachers' and students' computer devices and software. The most obvious one is the PCs and OS. While our students are talking about their advanced notebook with Windows 7 running on iCores 5 or 7 and with at least 4GB DDR3 ram to do their works, our colleagues were still fighting with their out-dated desktop machines using Windows XP on a P4 machines with 256MB DDR rams. Many of the latest software cannot run on our computers, let alone developing courseware for students. Time leg effect also caused the incompetency in using new software. For students, using the ribbon-style Office is a must; but for our teachers, it is completely alien software compared to a pull-down menu. Therefore, some of the teachers are become naive in using new office software.

2. When novice meets savvy

Despite the difficulties we faced in the past two decades, thanks to some of our colleagues' positive attitude towards the new modern of teaching and learning, we have build an interactive learning environment in the sense of flexibility of time, place , space, interaction, technology and control.

When the wave of ICT in education flashed up in the late 1990's, we have had been the first few departments in the University of Hong Kong to adopt the new technology to offer teaching and learning activities. One of my courses was invited to be the pilot courses for test and was introduced to other

colleagues as an exemplar of using IT in teaching and learning in 1997. At that time, our courses were the first few Chinese courses in tertiary education to fully use IT in teaching and learning with problem-based and collaborated curriculum design.

It is in the design and running process we found that the most serious problems in using ICT for teaching is the rapid advancement of technology.

Most of our colleagues are well-trained "language teacher", but not a well-trained "technician". They are novice in computer knowledge. They may only use a PC as typewriter to prepare their teaching materials, to surf the web or checking e-mails. Some might even not know where the exact folder is when they downloaded something. The most popular functions they used were cut and paste. However, using ICT in teaching and learning means tons of new technology needed to be learnt at a very short time, let alone the new pedagogies in ICT learning. Research papers on the subject made thing worse. When teachers want to further expand their knowledge on the field of ICT learning, they will find that most of the research papers are full of technical jargon, or simply a programming article. When suddenly there comes tons of new functional activities like audio and video clips, online exercises, multi-media CDs rush in, many will found it difficult to manipulate. At this point, a teacher without advance computer training seems not capable for using ICT.

3. Blended design of Teaching and learning

As many language teachers in our programme are novice to advanced computer technology, and some of them even can be graded as naive in computer knowledge, it is hard to carry out a total implementation of ICT in a short time. To balance the use of ICT and traditional mode of teaching, we designed the courses with a blended mode, in which mixed modes of instructions are used.

At the beginning, we designed the courses by adapting a tripod strategy of learning which blended mode of traditional classroom lectures, face-to-face tutorials, and intensive online exercises were to be used, with all these aspects involved. To support the huge among of learning activities, lecture notes and references are uploaded to course website, one based on the platform of WEBCT. Besides, we used the interact nature of ICT to help students. Interactivity refers to the action and reaction amongst learning parties involved in an activity, and between students and the computer. (Barretto, Piazzalunga, Ribeiro, Dall and Filho, 2003) Interactivity can be divided into four main categories, namely learner-content, learner-instructor, learner-learner, and learner-interface. (Ellis, Ginns and Piggott, 2008, p.305) The last one can be an integrated part of the other three on computer programmes.

In our course, ICT helps students getting peer reviews and reflection of their performance, sharing minds and works, and generated new knowledge in the following ways.

(i) Multi-media CD for peer review and reflection

Two key factors shall be considered in a collaborated group presentation project are (1) peer and instructor review and (2) self-reflection. Using ICT such as video capture and CDROM distribution, online questionnaires of peers and teachers review can well serve the above objectives.

In the face-to-face sections, students prepare their group projects with a final presentation in front of the class. They can used computers with powerpoints-like software to do their presentation.

Began from 1998, we started to capture the whole presentation and burnt the video into a CD Roms for students to review their performance. At that time, hardware was not as powerful as nowadays. To let

every teacher to control the capturing process smoothly, we chose hardware capture devices like Dazzle to do the real-time capture and conversion of media files with digital video camcorders. These devices help us minimized the post-process of conversion. Each video file was saved in mpg format and was ready-to-use for CD production. Teachers needed only concentrate on the performance of students in presentation than the complicated capture process. From the beginning, due to the slow burning speed of CD writers, we need to capture all video files first and do the production later. By 2000's, with the rapid expansion of writing speed of CD writer, we could almost prepare the CD for students by the end of each tutorial.
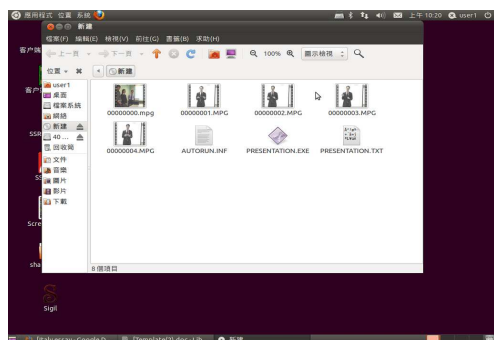
For the production of CD, we used Illuminatus. This software is easy to master. Anyone without programming knowledge can build interactive CD in few minutes. To further simply the procedures, we minimized the use of video files into four teaching videos and one student performance video. Teaching videos were already placed in the proper folder with the execution files need for run. Any teacher with based computer knowledge like renames filename, drags and drops file with mouse, presses buttons can manipulate the burning process. When students' presentation and peer evaluation and teachers' own comments were captured, the class teacher simply droped the video file into the right folder and renamed it into 00000000.mpg, then selected all the files in the folder and press "burn into CDROM".
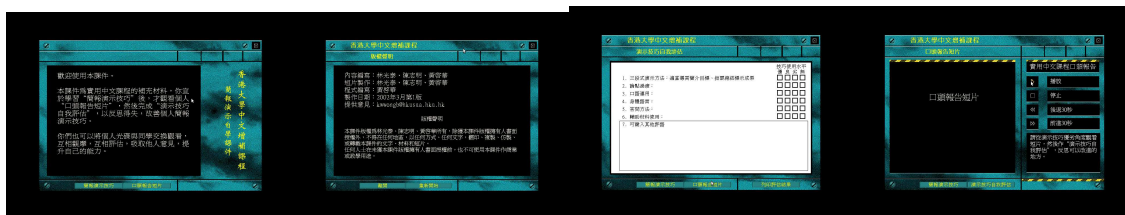

Welcoming page and copyright statement Self-reflection questions Video control panel

(ii) Online reflection and review

When Youtube became more popular, we felt that it is not easy to take control on the video files we provided for students not to me mistakenly or deliberately uploaded to web without the consent of involved parties and considered that the school administration do not have any guts to take the responsibility of any improper leakage of videos, we decided to end the CD distribution in the collaborated presentation project.

From about 2007 onward, we used other ways for reflection and review activities. Peer review remained in-class with a set review questionnaires to be filled and signed by students, then scanned and upload the scanned file to students' online presentation folder. The presentations are required to make self-reflection in-class to review their performance. Teachers' comments were also written down and uploaded to web folder. Sudents can receive comments from different peer groups through these practices. With the use of Blackboard Learning System (former WEBCT), course designers could create seamlessly upload and viewing experiences for teachers who were not able to work with sophisticated web-based learning environment.
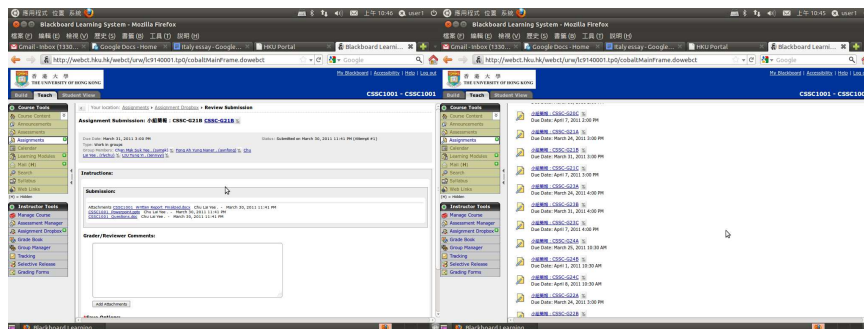
Teachers can view and add comment in the dialogue box or upload files of comments by pressed "Add Attachment" (left) Students uploaded their files and view teachers and peer group comments. (right)

(iii) Sharing of Beautiful Minds and Works

To encourage the activity stimulate students' critical thinking via peer group review, all the presentation materials were uploaded to course web site for instructors and peer review. In 1998-2003, we also use the mindmap tools to make the share of mind between learners.

Using a free mindmapping software (Mind Map Personal), our students could generate beautiful mindmaps and upload to course web-site, together with the presentation and document files. Teachers and other students could review on them. Thus, teacher and peer review could be easily achieved. In this process, no teacher was required to involve deeply in technical issues except for those courses and activities designers.

By mid-2000, due to heavy workloads of the course reflected by students, we had to stop this online critical thinking activity. But fortunately the traditional practice of group presentation files upload remained unchanged.
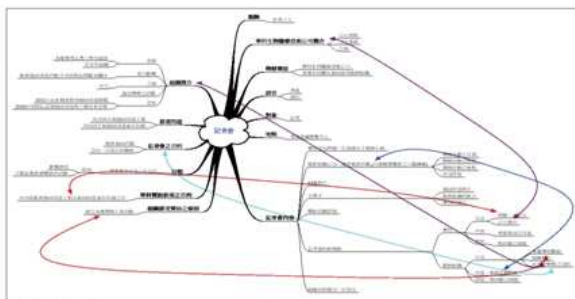

(iv) Voice generator for Putonghua

Increases in components in Putonghua have become a problem for our course, which are unable to provide sufficient manpower to serve the student population. Web-based solution has become a top priority for curriculum design because of the tiny budget. To take advantage of the extendability of web learning, we decided to buy a new server using a part of our salary. The school only need to purchase a software.

The new component for Putonghua is the support of instant generation of sound files. The main advantage of using this is flexibility for both teachers and students. Most students have received basic PTH training in primary and secondary classes and are capable of using PTH for simply conversation. A comprehensive and intensive course is not an efficient way of learning. However, when using the language to present their collaborate projects, students need helps in the preparation stage. A sound file generator can help to satisfy their need.

This generator is based on a real-time true voice text-to-speech engine developed by a China company located in Anhui. Unlike most text-to-speech engine using computer-animated sound, this one use real voice and can speak out passages as TV broadcasters. This is a server-side software and need to be well configured before it is ready to used. Although the software claims to be Linux-compatible, it is actually Microsoft Server based. That means we have to purchasing a Windows 2008 server to host it. In spite of this unexpected issue, we can manage the server well.

We adopted the content-push and content-pull idea to embed this sound file generator service. As to increase the flexibility for both instructors and learners in controlling of the subject content they want to deliver and receive, we also embedded a simple interface of the sound compiler. A textbox was used to input to-be-converted text. Even if the teacher or student can not type Chinese properly, they can cut and paste the content from the browser. Teachers can tailor-made any materials as considered appropriate and students can easily compile any interesting article or phrases they need. For teachers, they can prepare lists of basic vocabulary for different disciplines. For students, with the prepared lists of vocabulary, they can listen and practice. If there is something they wanted were not listed, they can use the generator to run it. All these interactive teaching and learning processes are simply cut and paste, then a conversion of it to .mp3 or .wav file. When the sound file was generated, they can either listen it on the spot or download it and listening later.
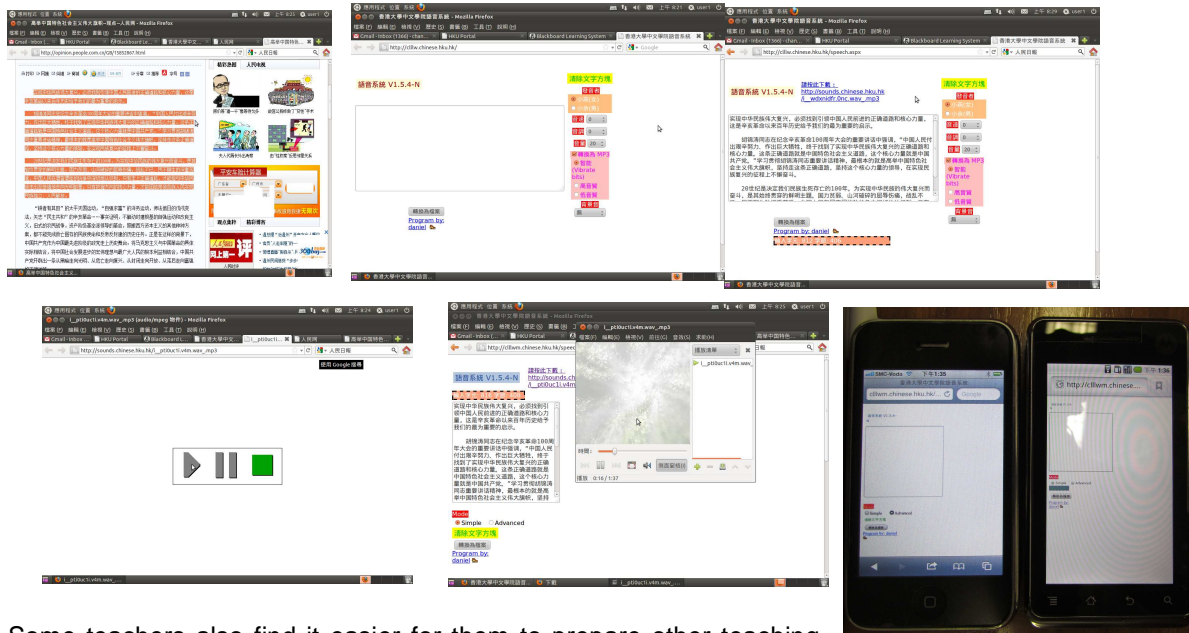
Some teachers also find it easier for them to prepare other teaching and learning activities. It would be very time-consuming to prepare listening comprehension before. With this system, it is click-and-run. It is possible to prepare massive number of exercises in a short time. Some

of them even use this system to enhance their online presentation by writing a script of contents and them embedded the sound file into teaching notes so students are can not only read but also listen to the teaching materials.

We can notice that some students use the sound compiler as a auxiliary tool for daily life, such as generating sound files of food stuffs or travel dialogues. Some even tried to compile passages of story books.

Besides, we have developed a mobile version of this voice generator for smartphones and other movable devices to use. With mirror modification, teachers and students can access to the server whenever and wherever they like.

4. Conclusion

We are in the tide of information age, and even for the computer-naive teachers who have had little computing knowledge and could just do the upload, download or cut and paste jobs, there are many ways to get involved with ICT in teaching and learning. By using the right platform and software, together with a user-caring mind of design, we can bring those computer-naive language teachers who are willing to contribute in ICT teaching and learning activities to help building interactive components.

References

1. Breen, R., Lindsay, R., Jenkins, A., and Smith, P. (2001) The Role of Information and Communication Technologies in a University Learning Environment, *Studies in Higher Education*, 26:1, pp.95-114.
2. Ellis, R.A., Ginns O., and Piggott L. (2008) E-learning in Higher Education: Some Key Aspects and Their Relationship to Approaches to Study, *Higher Education Research & Development*, 28:3, June, pp.303-318.
3. Piccoli, G., Ahmad R., and Ives B. (2001) Web-based Virtual Learning Environments: A Research Framework and a Preliminary Assessment of Effectiveness in Basic IT Skill Training, *MIS Quarterly*, 25:4, December, pp.401-426.
4. UNESCO (2008), CT competency Standards for Teachers, Paris: UNESCO