Empowering Chinese EFL teachers with technology: A computer applications course for English teachers

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Abstract

While China is fast moving toward the Information Age and schools are increasingly more technology-enhanced, Chinese EFL teachers in general are not prepared for the new era. The author, an English instructor at Capital Normal University, which trains secondary school teachers, believes that teacher training universities should assume the responsibility for empowering Chinese EFL teachers with technology to meet the challenge of the English education in the 21st century. This paper reports on a computer applications course designed for pre-service English teachers.

Keywords

Computer applications, teacher education, integrative CALL, project-based learning, dual immersion

Background

While China is fast moving toward the Information Age, Chinese schools are increasingly more technology-enhanced. Chinese EFL teachers, however, are in general not prepared for the challenge of the new era. Computer literacy training of both pre-service and in-service English teachers lags far behind the development of information technology. A large percentage of Chinese EFL teachers have yet to be trained in computer literacy, and the existing computer classes where English teachers have been trained are almost completely divorced from language learning and teaching. To meet the challenge of English education in the 21st century, it is imperative for China to develop computer applications programs geared towards English teachers.

In the last five years, I have carried out a pilot project involving developing and teaching a computer applications course for both in-service and pre-service secondary school English teachers. A total of 716 teachers (433 pre-service and 283 in-service) have been trained on the course, and highly positive feedback has been obtained from the trainees. This paper reports specifically on the computer applications course for pre-service English teachers.

Reshaping English teacher education

With the globalisation process, the use of English is increasingly connected with the use of technology, which is redefining and reshaping the knowledge and skills that language students need to acquire (Hill 1998). In discussing the nature of the information-based, post-industrial society and its impact on literacy, Warschauer (1999) points out that "the Internet is an important social environment, rather than a tool or a thing. It is becoming a major, in some ways THE major, environment in which people use English for reading, writing, and interpersonal communication".

In such a new environment, therefore, e-literacy skills such as online reading, research and communication, multimedia authoring, and electronic publishing have all become necessary skills in the use of language, and accordingly indispensable elements in language learning and teaching. Hill (1998) provides examples from China to illustrate such reshaping of language knowledge and skills, and calls for reshaping the educational system so that Chinese students are given opportunities to acquire these knowledge and skills.

This new perspective on language and language education suggests the need for radical reform in English education curricula at various levels to incorporate technology as an integral part of English classes. To accomplish this, however, a prerequisite is the preparation of teachers. English teacher training institutions must reshape English teacher education. We must reform our curriculum to achieve the double goal of ensuring that both pre-service and in-service EFL teachers develop "new technology-enhanced literacy and skills" (Warschauer et al. 2000:87); and acquire the ability to integrate such knowledge and skills into language classroom.

The English Education Department (at the time called the English Department) of Capital Normal University (CNU), which trains English teachers for secondary schools, started such a curriculum reform in 1996, when the CNU English CALL lab was established. In the last five years, with the conviction that preparing teachers to meet the challenge of the Information Age should be an important part of English teacher education, we have carried out a comprehensive reform aimed at integrating IT technology into our English teacher training curriculum. To achieve this, we have developed three new technology-related courses:

1. *Introductory Computer Applications* for English majors (for first-year students)
2. *Computer Applications in English Education* (for pre-service and in-service secondary school English teachers)
3. *CALL: Theories and Practice* (for graduate students).

Specifically, the *Introductory Computer Applications* course (2 credits) is offered in the first year to help students acquire basic computer skills (e.g. English word processing and typing, e-mail skills) so that students can use the computer effectively in their English study during their university years. The second course, *Computer Applications in English Education* (3 credits), helps pre-service teachers (undergraduate English Education majors) and in-service teachers acquire computer skills and knowledge that will enable them to work with computers in their profession. The third course – *CALL: Theories and Practice* (3 credits) – provides a combination of CALL theories and practice for graduate students, many of whom will become university teachers. Such a curriculum ensures a systematic, graded learning process and an environment that helps students at various levels develop computer literacy and abilities to use technology in language learning and teaching.

Of these three new technology-related classes, *Computer Applications in English Education* has had the greatest impact from the perspective of English teacher training, as it is directly relevant to language teaching and has involved the largest number of students and teachers. Since Spring 2000 we have been able to give this course an even larger scope by teaching it in the Gardener Project, a national teacher training programme sponsored and funded by China's Education Ministry, the trainees being selected English teachers from secondary and elementary schools nationwide.

Computer Applications in English Education for pre-service teachers differs from the courses offered to in-service teachers in two respects: the gap in students' entry level of computer literacy and the length of the semester. Our undergraduate students usually have a much higher computer-literacy level than in-service teachers. Also, they have the advantage of having regular classes for the whole semester, whereas the in-service teachers often have rather tight time schedules (for example, a summer class). Thus the pre-service teachers' course is more systematic and comprehensive, and

the preferred pedagogical approaches can be more easily implemented. It can serve as a better illustration of a complete computer applications course for English teachers.

Contents of the course

The course, as its name suggests, is an applications course and most class time is spent on learning practical skills through large or small projects. The course is scheduled for the second semester in the third university year, so that the students may make use of the skills they learn in this class when they do their teaching practice in the fourth year.

Secondly, in spite of the course nature as an applications course, I always give priority to offering students a clear orientation for integrating technology into language education. By this, I mean helping students gain a clear understanding of technology, its impact on society, on education and on language use, language learning and teaching; and a basic understanding of CALL with appropriate pedagogical and language teaching theories and approaches. To achieve this goal at the beginning of each semester, I include in the class lectures on CALL an overview of history, trends and practices. Students are also assigned to read papers or book excerpts on CALL or educational technology (e.g. Heide & Stilborne 1996; Warschauer 1996, 1999) and to write reading reports.

Thirdly, in addition to CALL knowledge and computer skills, I also set English language learning as one of the course goals, especially the learning of English computer terminology and concepts and the learning of online writing styles and conventions (e.g. netiquettes and emoticons). Students have no chance to learn these things from any other class.

The following illustrates the course content, from the course description in Spring 2001:

- Computer basics: concepts and terminology
- Introduction to educational technology and CALL
- Using productivity software (e.g. *Word*, *Excel*) in English education
- Exploring and evaluating CALL software
- The Internet and its implications for educators and language teachers
- Using communications software (email, online chatting, electronic conferencing) in English learning and teaching
- Using the Internet browser and search engines to get information from the World Wide Web
- Developing Web pages to present information on the World Wide Web
- Using PowerPoint to develop multimedia courseware for English language learning/ teaching.

Approach to teaching the course

To teach this course, I have adopted a combined approach, my first rationale for which corresponds to Levy's (1997:181) "introducing and using approaches, strategies and techniques with students that they themselves may subsequently use with language learners in their own classes". Levy calls this "one of the most valuable strategies" in language teacher education and claims that it "has the advantage of illustrating both the mechanics of the activity (the *how to*), and its rationale (the *why*); it can help teachers avoid wordy, abstract explanations, and can raise students' awareness in ways that would not otherwise be possible".

Warschauer (1996) defines the current approach to CALL as 'integrative CALL', which is based on both a cognitive view of language teaching and a socio-cognitive view that places great emphasis on language use in authentic social contexts (Warschauer & Meskill 2000). This approach, according to Warschauer and Healey (1998), integrates into the language learning process:

- a combination of various approaches (e.g. task-based, project-based, and content-based);
- various language skills (i.e. listening, speaking, reading, writing);
- a full utilisation of technology.

Such an emphasis on the instrumental use of technology in language learning, and on the provision of learning environments in which students can use language in authentic social contexts and construct creative products (cf. Debski 1997; Barson 1998; Shneiderman 1998), can be seen as representing the new trend in language education. In adopting integrative CALL in my teaching, I have designed learning activities through which students can experience the combined approaches to language learning and teaching, the combined use of language skills and a variety of technological skills. In addition, I have included strategies based on dual-immersion and project-based collaborative learning.

Dual immersion

The term 'dual immersion' was suggested by Opp-Beckman (cited in Warschauer et al. 2000:87) for having students immersed in learning language skills and technology skills simultaneously. This is the principle which has guided the design of some of my projects.

However, as mine is a teacher training class, I deemed that I could extend the implication of dual immersion to include letting students learn and experience a new approach to language learning and teaching, as well as having students immersed in learning language teaching skills and technology skills simultaneously. Such an approach will ensure that technology is learned in combination with meaningful language learning activities and meaningful teaching-related activities.

Project-based, collaborative learning

Project-based learning often involves a series of learning activities on a particular theme relevant to the interests and daily lives of students. In language education, project-based learning is often carried out through the combined use of technology and English language, and through collaborative learning. For example, an Internet-based project can be a combination of a series of activities such as a research on the Web, cross-cultural communication by email or electronic discussion groups, and electronic publishing. In my class, I have organised several major projects that require students to accomplish challenging projects in teams or pairs by using new technology skills they have learned. The following section will introduce a few sample projects carried out in this class.

Sample activities

Web search project

This is an illustration of a simple dual immersion activity. The project was one of the two Web search projects done in Spring 2001. The assignment was to learn certain Internet terms and concepts through the use of online dictionaries (e.g. *World Wide Web*, *URL*). Students were required

to use an Internet search engine to find at least three online dictionaries and then create a Word document to include:

- the dictionary names and URLs;
- the assigned terms with three definitions for each from the dictionaries found; and
- highlights in each set of definitions of those that gave the clearest explanations.

After the students had submitted their work electronically as instructed, we used the lab network to share some of their documents and discuss the meaning of each term and why some definitions were better than others. In this activity, the students learnt the use of search engines, were introduced to online dictionaries, encyclopaedias and other language reference materials, developed new vocabulary, and practised critical thinking skills through critiquing the online materials.

Web page project

Shneiderman (1997:vi) uses the terms *service-oriented approach* and *relate-create-donate strategy* to describe the notion of having "students work in teams to create ambitious projects that are meaningful to someone outside the classroom". Inspired by his idea of "making waves" which stresses the importance of engaging students in activities to contribute information by using the target language, I started to include the skills of Web page authoring in my pre-service teacher course in 2000. The students were highly motivated and greatly enjoyed the project. Yet, probably due to the shortage of time and lack of experience on my side, too much focus was placed on form rather than on content. The texts produced by students generally lacked originality, and there were many language errors.

To improve the quality of this activity, I developed a joint project in the Spring Semester 2001 in co-operation with the writing class, teacher Marilyn Burke. The subject was to introduce modern China (entitled 'Modern China, Modern Lives'), and we required students to write from their own perspectives using their own experiences or data gathered from their own research.

We co-ordinated our class schedules so that the project was carried out coherently first in the writing class, and then in my class. In the writing class, Burke provided a list of topics and subtopics for the students to select from for writing a research report. The description of this report assignment is as follows:

> You will work with a group of students to undertake research on life in China today. The aim of the research is to show how life in China has changed and is changing. During this task you will
>
> - be responsible for researching and recording information on one particular aspect of life in China;
> - record information from books, magazines, newspapers, journals, Web sites (Some of your information might be only available in Chinese so you will need to practise your translation skills!);
> - interview people and note their comments; and
> - gather visual information such as pictures, diagrams, photos, cartoons, sketches, maps – these will be scanned and included on the Web site.

While the students wrote the draft and revised it, I taught Web page authoring skills in my class. Meanwhile, the students gathered visual materials and scanned personal photos and graphics from various sources into the computer. Then, they developed their Web pages using the revised text

and visual materials they had gathered. The whole project lasted seven weeks, and the students shared their products in the last week. Then, more time was allowed for further improvement after class. At the same time, a couple of students were selected to develop a home page linking all the pages together.

The joint Web page project was more successful than the project in the previous year. The quality of the Web pages was higher, with better design, more authentic voice and more appropriate language. In this project, multiple goals were accomplished. The students learnt how to write to meet the needs of a target (world) audience, how to carry out research and present results in a report, how to gather materials by traditional and electronic means, how to use multimedia materials to enhance their writing, and how to effect electronic publishing on the Web. More importantly, they experienced the whole process of a Web project as a model for their future teaching.

The project (available at http://www2.fli.cnu.edu.cn/education/modernchina) provides a unique collection of materials for students all over the world who want to learn about Chinese culture. In fact, our first audience were students from a Chinese civilisation class taught by Dr. Cathy Wei in Pasadena City College, USA in the Fall Semester, 2001.

Cross-cultural exchange project

I try to include a cross-cultural exchange project in this course whenever possible. In reality, the first cross-cultural exchange activities I organised was the use of International Students' Lists in 1998. A communicative project I included in my class in Spring 2001 was an exchange project with Waseda University in Japan. This is one of the projects in a large programme called CCDL (Cross-Cultural Distance Learning) initiated by Waseda University. The goals of the activity were to provide students with an opportunity to develop electronic communications skills and global and cultural awareness by using the target language and various Internet tools. The project lasted for six weeks, mainly outside class time. The major activity forms were one-to-one online chatting and email communication. To make the project purposeful, I assigned the students to wind up the project by writing a 3–4 page essay comparing Japan and China in respect of one cultural feature.

Sixty students in my class were paired with sixty Japanese English majors in two second-year writing classes. The major communication software was *CU-See-Me*, a video-conferencing tool. With this software, students could see each other's faces on a section of the screen while 'chatting' (written conversation). This was a new form of communication for my students, and being able to see the partner was highly motivating. Every week each pair of students was allocated a time slot of 30 minutes for chatting. A topic for conversation was assigned for each week (for example, university life and youth life, leisure activities); the students could also discuss anything they were interested in. In addition, the students carried out much email correspondence, as 30 minutes' chatting time each week was far from enough for my students to gather information for the final paper. To help my students use English efficiently in online situations, I gave a short lecture on online writing styles and gave students a list of Netspeak including online slang and smileys for reference.

In this project, students acquired different online communicative skills and cultural knowledge, developed friendship with Japanese students, learnt the style of online English writing and vocabulary, and gained a better understanding of the functions of Computer-Mediated Communication (CMC) in language learning and teaching.

PowerPoint project

The *PowerPoint* project, usually lasting five weeks, has been a favourite activity of both pre- and in-service teachers in my class since 1997. In the project, students work in pairs or in teams to develop a set of slides that can be used in a language classroom. They have to select a lesson or topic and develop a set of slides for a particular purpose, for example, to present new knowledge such as a grammar point, or a cultural phenomenon, or to help stimulate oral or written communicative activities. At the end of the project, students need to write a brief description of how to use the courseware, and a comment on the advantages of using it. In addition, each team or pair has to give a 5–7 minute oral presentation to introduce their slides to the class.

The *PowerPoint* project requires that students apply the pedagogical and language teaching theories, approaches, and techniques learnt from the methodology class or gained from their own experience. Furthermore, it requires many more skills than simply using *PowerPoint*. Students have to learn how and where to find multimedia materials or how to produce them (e.g. extracting multimedia materials from various resources such as multimedia encyclopaedias, VCD movies, or the Web; using graphics, audio or video productive software).

Course evaluation

In the last five years, some 433 undergraduate students in our department have been trained on the *Computer Applications in English Education* course.

Feedback through post-course questionnaires as well as personal comments by e-mail indicates that the students have enjoyed the course, recognise its importance to their future teaching career and value the practicality of the course contents that empower them with the necessary technological skills.

In the questionnaires or email comments, students have stressed the following as the most striking aspects of the course:

1. Practicality of the course contents

Most students have expressed a strong liking for the course due to its relevance to language learning and teaching, and its emphasis on hands-on experience that helps them acquire computer skills. They claim that the skills learned in this class are very practical and will help them become "modern teachers in the future" (from a student's email comment).

2. Benefits of the course projects

Most students have expressed their appreciation of learning through course projects, believing they benefit a great deal from such a learning process. The most popular projects have been the Web page and *PowerPoint* projects, both of which are challenging and time- and energy-consuming. The final learning products seem to be the best incentives for work, as almost all the students report great enjoyment and a strong sense of achievement derived from them.

3. Cultivation of strong interest in using technology

A large number of students have reported a positive change of attitude toward the use of computers. In the learning process, they develop confidence in their competence in using

technology, which replaces their long-held fears of the computer. In many comments, students indicate a strong desire to use technology and to further their learning in this area.

The major criticisms of the course have included its short duration, contributing to the lack of practice time (the scheduled practice time was often not enough, and the opening hours of the lab were limited), and the lack of help when students were faced with technical difficulties, as we could not afford to offer help to students when they did their homework outside class. Another weakness is the failure to address individual differences in the class. A small number of students, whose computer literacy was higher than that of most students, felt dissatisfied with the course content. This is probably a universal problem when a computer applications course is taught, and it is more obvious with an in-service teacher class, where the gap between the students' computer literacy levels is usually much larger. This factor needs to be taken into consideration, and individual arrangements should be made so that these students can also complete projects that are challenging to them.

Some reflections on the course

Project-based learning and intrinsic motivation

Using the project-based approach to have students engaged in action and activity has proven a very effective strategy in the creation of class dynamics. The evidence from this class has justified the belief of "catalytic effects of accomplishing projects as a primary source of intrinsic motivation" (Barson 1998:11). The Web page project, for instance, was one of the two largest projects in the class, involving learning many new computer skills. In spite of the many obstacles and frustrations, the students enjoyed it most and felt they had learned the most from this project. The motivation in this service-oriented activity may have come from its relevance to real life, the pride and sense of achievement students felt about their products, and taking up challenges. I am convinced that well-planned projects are essential to the success of a computer applications course.

Taking full advantage of dual immersion activities

The dual immersion approach seems to have been successful as well. Education now is moving away from the teacher-centred to the student-centred class, where students can learn through activities and projects using technology. Teachers need to adapt to this new environment and learn how to serve as guides and facilitators in such activities. Dual immersion activities give the trainees opportunities to experience such learning in environments where technology plays the roles that they have hardly been exposed to.

Keeping up to date with the new trend of CALL

The new perspective of CALL no longer views technology as a tool for language teaching. In expounding the new CALL trend, Shneiderman (1997:vii) states:

> We are rapidly moving away from 'computer-based instruction' and 'intelligent tutoring system' in which the narrow choices for students sooner or later make them the victim of the machine. The new paradigm of learning environments in which students construct creative products and performances is spreading rapidly.

In China, one drawback in teachers' technology training is the major focus on developing courseware (e.g. by using *Authorware* or *PowerPoint*) while ignoring other computer functions in education. Instructors on computer applications class for English teachers must not view

computers only as course material delivery machines, but instead they need to keep themselves updated with new pedagogical concepts.

Conclusion

The present networked-based society calls for training English teachers with new qualities that include not only the e-literacy required of every citizen but also the theories and skills of using technology in language learning and teaching. Integrating technology into the English teacher training curriculum is essential to reaching this goal. Courses that relate technology training to language learning and teaching are still rare in China, and we have witnessed a great demand for such programs among Chinese English teachers. More English teacher training institutions in China need to work in this area to undertake the task of empowering Chinese EFL teachers with technology.

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