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## **A Network to Support Educational Changes**

### **Abstract**

In 1998, there was a major shift in the medium of instruction in Hong Kong secondary schools from English to Chinese. This change had many educational advantages. However, its implementation was not without problem. For example, the general public will probably label those schools using Chinese (CMI schools) as inferior to those using English (EMI schools). More seriously, most of the teachers, with their own learning experience only in English, may not be able to use Chinese as a language for teaching their subject-specific knowledge. This paper reports the work of a computer network, specifically established to support the educational change and discusses the strategies on providing effective support to educational changes through computer networking. The most important contribution of the network lies in the knowledge creation and the growth of the CMI school community as a whole, collecting, uplifting and disseminating high quality pedagogical knowledge within the community. Close collaboration with the front-line teachers at schools has also been highly valued, hoping to tackle down-to-earth problems of the teachers.

**Keywords:** Language of Instruction, Teacher Development, Network Application and Learning Community

### **1988: Change in Language of Instruction in Hong Kong**

Before 1997, Hong Kong is one of the colonies of the British government. Together with the demand of economic development, English has been used as the mainstream teaching medium for a long time. In 1994, 90% of the schools in Hong Kong used English as the medium of instruction. Over a long period of time, the policy of the colonial government was to leave the choice to the schools' discretion on selecting the most suitable language of instruction (香港未來十年之中等教育, 1974). However in 1990, the government had changed her policy, proposing that "Children on one hand have to learn English, and on the other hand have to learn other subject matters using English... This has imposed much pressure onto the children.(教統會第四號報告書, 1990)" The schools were advised to base on the abilities of the students to choose the language suitable to the children. In 1997, the government further required the instructional language in junior forms to be dependent on the evaluation results of the newly admitted form one students. Within one year, starting from 1998,

about 300 secondary schools in Hong Kong (about 70% of the total) has changed to use Chinese as the medium of instruction (CMI) in the classroom. The remaining of only about 100 schools continues to use English to teach the students.

### **Problems and Difficulty of the Educational Change**

Some of the schools and parents are reluctant to the change. Other educators believe that this will cause a polarization of the schools with negative labeling effect. The general public will also mistakenly interpret the CMI schools as the inferior. Some of the parents and the students of the CMI schools protested against the change. There are also parents competing to send their children to English kindergarten and primary schools. These negative phenomena have reflected the influence of the educational change on the various sectors of the society, which is definitely not a simple matter.

Besides this, teachers have actual difficulty in teaching with Chinese. Chinese is the mother tongue of most of the teachers. Probably, one will believe that the change of instruction language to Chinese will definitely remove the language barriers of most students in learning. Actually, this is not enough. The everyday language people used in Hong Kong are the Cantonese dialect, which is different from the standard official written Chinese. Beyond that, if we further separate the Basic Interpersonal Communication Skills BICS from the Cognitive Academic Language Proficiency CALP (Cummins, 1981), the complexity of the problem will become more salient. Classroom language is an important tool for students to construct knowledge. It is the combination of instructional language and subject specific genres. But the learning experiences of most of the teachers, including university training, have been in English. The teachers are used to using English as the language for thinking and learning. To be able to effectively teach in Chinese, the teachers have to go through another experience on the learning process. However, knowledge and research on subject specific genre in Chinese is still to be developed.

The above difficulty does not only occur in Hong Kong. Other colonies such as India, Philippine and Malaysia do encounter similar problems (謝等, in press).

### **The Establishment of the CMI Center**

In response to the above policy on the language use for instruction, the Faculty of Education at the University of Hong Kong has conducted in-depth discussion and given positive feedback for the issue, reassuring the importance and the advantages of using mother tongue as the language of instruction. Believing the use of CMI to be the right direction, the faculty has decided to support this educational change with the provision of the following service:

- Improving the ability of the teachers in using Chinese for instruction
- Conducting related research on language of instruction and subject specific genre
- Promoting relevant teaching strategies and innovative assessment methods

Considering this, the Department of Curriculum Studies at the University of Hong Kong has proposed twice to the government during 1997 and 1998 on the formation of the CMI center and the CMI teacher support network. Making use of the researching ability of the university, the center aims at disseminating teaching resources from the CMI schools to support and promote this educational change in the language of instruction. In September 1997, a sponsorship from the government was awarded.

### **Strategy on the Provision of Service**

At the beginning of the operation, the center has encountered the following difficulty:

- 1 Wide coverage of service: including all junior secondary teachers of the 300 CMI schools and involving seven different subjects
- 2 Limited time: The change in the language of instruction is already undertaking, thus the center should start operating within a very short timeframe.
- 3 Local need: The service provided by the center should meet the need of the teachers in Hong Kong. Simply replicating the resource from other Chinese-speaking regions without modification will not be possible.
- 4 Stringent human resource of the center

Because of this, we must have strategic planning in allocating the resource. To support such large number of teachers, the use of computer network has become indispensable (Ki, 1996). We understand that the limited number of professional staff in center can never replace the work of the front-line teachers in the 300 CMI schools. The main contribution of the center should focus on the construction of knowledge: starting with the practical experience of teaching in schools, accumulating,

enhancing, constructing useful knowledge and disseminating back to the teachers in schools, promoting and supporting the use of CMI.

Besides this, with the limited resource, we must prioritize and schedule the working items. Those items given high priority should directly meet the need of the day-to-day work of the teachers, and at the same time, should also foster the professional development of the teachers. As such, the center started off with interviewing the CMI schools in order to summarize the experiences of those schools with many years of using CMI and to understand the need of those schools recently changed to using Chinese. Survey questionnaires have also been administrated to all CMI schools. Based on these findings, we laid down the fundamental direction of the center (徐等, 2000).

When providing supporting service to the teachers, the center should make use of the strength of both the computer network medium and the face-to-face interaction. The speakers in workshop interacting with the participating teachers could often produce high quality teaching contents, with both theory and practical values. Put onto the web, the contents are likely to be appreciated by other teachers. One of the major duties of the center is to promote new teaching culture, taking the advantage of using CMI and unloading the language burden of the students. In this aspect, our strategy is to establish close relationship and collaborate with the schools. Novel teaching designs will be implemented in the classroom. Classroom interaction and the discussion among the students are videotaped. The students' worksheets are also collected, which will be put on the Internet for the use of other teachers as reference. These materials are ready-to-use and convincing to other teachers as well. The construction of knowledge and the publication of the experiences on the web can create a common understanding of CMI teaching among the CMI schools in Hong Kong. This promotes a culture of collaboration, and is further beneficial to the establishment and the growth of a community of CMI teachers.

### **Network Service**

The operation of the CMI support network is steered by three main directions: (1) generating new network resources, (2) promoting self-directed learning of the teachers, and (3) sharing of teaching experience among the teachers. The service of the network includes the following.

## 1 Question Bank

The questions inside the Question Bank are collected from the membership schools. After modification and categorization, the questions are put on the web for other teachers to download and use. The questions can also be arranged according to different criteria: subject, unit and question type. Teachers can put the selected questions into a "basket" and later print out as a question paper. With the use of this facility, the task of teachers to sit an examination paper will become much easier, as shown below.



Figure 1. Putting desirable questions into the Question Bank "Basket"

## 2 Teaching Design

Teaching Design is a repository of novel teaching-ideas, changed into usable classroom teaching materials. Unloading the language barrier of the students with the use of CMI, the teaching design promotes and develops the students' creativity, confidence and higher order thinking. Many of the teaching designs have also been put into practice in various schools, with an attempt to fulfill the actual need in the classroom. The process of implementing these designs is viewable on the web.

Besides this, teachers can also directly download the materials needed to conduct a similar lesson. Available materials include teaching design, necessary resource, worksheet and others. Teachers can modify the materials as needed, so as to design their own teaching. For the convenience of navigating, a consistent structure has been imposed among the different teaching designs: consisting of the design objective, teaching belief, preparation materials, process of the activity, reflection on the experience and the discussion with the teachers.

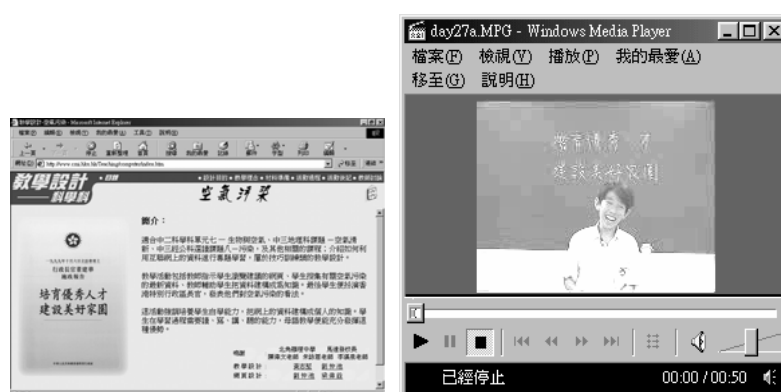


Figure 2. Novel teaching design with snapshots of classroom implementation

### 3 Web Sites for Teaching

Web Sites for Teaching is a collection of useful web sites, submitted by the teachers of the membership schools. These web sites are closely relevant to the day-to-day teaching of the teachers, and can be arranged according to subject and teaching unit so that the teachers can locate and use the web sites in a very convenient way. Besides, we have set up a voting mechanism, which allows teachers to vote for a web site in terms of whether the sites are interesting, useful, creative and informative. The teachers can also review and give concrete comments on the web sites so that other teachers can take these comments as reference.



Figure 3. Collection of useful web links with the reviews of the teachers

#### 4 Chinese Self-Learning

This section is composed of two parts: a self-study corner and a database of sample common mistakes of teachers. The self-study corner contains a total of ten units, each of which addresses one kind of common linguistic mistake. Apart from exposition, exercises and extended materials are also provided with the function of instant diagnosis. Each unit lasts about twenty minutes, promoting a culture of self-learning among teachers.

The other database contains the findings of our analysis on the numerous materials collected from schools. Frequent mistakes on Chinese writing have been identified and subsumed under different categories. Recommendations are made, with detailed explanation, to provide authentic samples of Chinese usage in real situation of schools. Teachers can browse through the database to learn and improve their ability in Chinese writing.

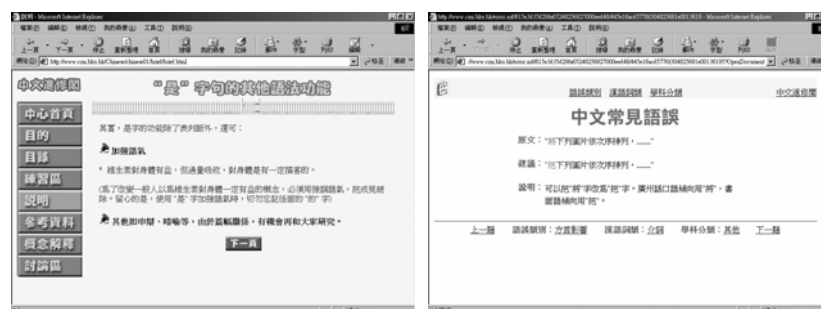


Figure 4. Web-based self-learning corner for improving Chinese proficiency



## 5 Reference Materials

Reference Materials provides resourceful information for those teachers who want to further improve their quality of teaching. This section contains sharing of experience from educators, teachers and administrators, put into web pages for other teachers to use as references. The materials provided include academic papers, research reports, articles in newspapers, workshop handouts, Chinese-English glossary for each subject, library catalog and information on collaboration with overseas institutes.



Figure 5. Providing a variety of referencing materials

## 6 Online Discussion Forum

Discussion Forum is a forum for teachers to exchange ideas and viewpoints on general Chinese usage and subject based teaching. A culture of sharing is promoted in these conversations of the teachers.



Figure 6. Online discussion about Chinese usage and subject teaching

## 7 Teacher Common Room

Teacher Common Room provides teachers with a free and open environment for the expression of feeling on everyday school life. Through sharing and showing empathy, teachers can help each other in a supportive manner.

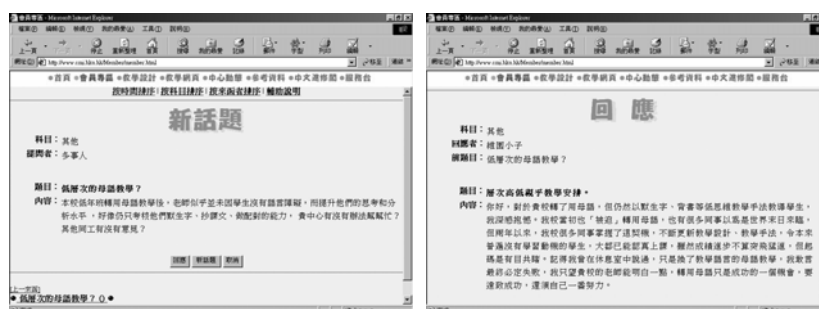


Figure 7. Expressing and sharing feeling with each other

## Reflection on Experience

### 1 The Foundation of the Establishment of a Web Site

Knowledge construction and community building are intimately connected. The process of constructing knowledge must be closely related to the practice in schools, addressing the actual need of the teachers. Only in this way, the schools are going to use the service provided. Our visits to schools have helped us to understand that in the various kinds of Chinese use, sitting examination is the most urgent need of the teachers, which should come first. Besides this, our school visits have also established the trust of the schools on the center. The school became willing to contribute their examination papers to our Question Bank. Using the collected materials as data, the center staff was also able to analyze and find out the most frequent mistakes made by the teachers in Hong Kong. The center has used the research findings as concrete examples to be shown to the teachers in various seminars, which have been highly appreciated. The teachers believed that these authentic examples are more relevant to their works than just general discussion of Chinese usage. The questions in the collected examination papers have also been modified, categorized and put onto the web for other teachers to use. The Question Bank is in fact one of the most frequently used services on the CMI web site.

## **2 Day-to-day Practice and Cognitive Development**

The one-year operation of the center has made us reflect upon the strategy on carrying out teacher development. The strength of the center is that it is neither a certificate-awarding institute nor a government agency, thus being flexible to concentrate on the actual need of the teachers. We found that helping the teachers in their everyday practice will not only be able to solve the problems they encountered, but also effectively foster the cognitive development of the teachers. Take this as an example: during school visits, we found that writing official documents is time-consuming to many of the teachers. Especially, the teachers are not familiar with writing Chinese, thus the teachers have turned to us for help. Apparently this is not related to uplifting the quality of teaching. But after careful scrutiny, we have agreed to provide such supportive service, and begin to collect and conduct analysis on official documents from schools. We believe that the analysis could not only produce useful samples to be shared among teachers on the web, but more importantly, enhance the proficiency of Chinese writing of the teachers through highlighting common mistakes usually made by the teachers. At the same time, analyzing the genres, functions and tones of these collected documents could also help teachers to understand the difference in cultures among the schools, in the way parents, schools, teachers and students communicate with each other. This should be beneficial to the professional development of the teachers.

## **3 Uniqueness of a Web Site**

A variety of web sites are now available to the teachers. Whether the teachers will find the web sites useful to them should depend upon the uniqueness of the sites and whether the sites are tailor-made for their particular need. The CMI web site is characterized by its two features: (1) combining Chinese language use and subject teaching, and (2) basing on materials from local schools and research. One example is the database of common mistakes in Chinese usage on the CMI web. Teachers can arrange the contents by subject, way of expression and grammatical structure, providing convenience to different subject teachers. At the same time, the concepts of Chinese usage are highlighted, illustrated by authentic examples from local schools. This kind of referencing materials can never be provided by other organizations.

## **4 Organization of contents**

The usability of contents is highly affected by the organization of the web site. According to the analysis of the access to the CMI web site, half of the teachers read the site for less than five minutes. As such, the most important and relevant information should be up-front to the teachers so that the teachers can quickly find out what they need. Most of the teaching materials in the site can be arranged by subject, course unit and type, which facilitates the different ways teachers use to look for their own desirable contents. A filtering function is also provided at the front page. Subject teachers can filter in only those contents relevant to their own subjects, concentrating on their need.

## **5 Quality of contents**

Since most teachers are usually busy with their teaching duties, the provision of ready-to-use and quality-assured materials is important. The materials we collected from school have to pass through a number of screening processes: (1) processed by particular subject teaching-consultant, and (2) modified by Chinese language expert, before put onto the web for the teachers to use. These procedures guarantee the quality of the materials on the web. Besides this, the learning units in the Chinese Self-Learning has also been carefully selected so that the units target the most common mistakes committed by the teachers, as indicated in our research on analyzing the collected materials.

All of the above factors can make the CMI web site a resourceful information-based web site. But to further advance the site to a platform for the establishment of a CMI teacher community, much effort has to be put in.

Our web-site access analysis has shown that about half of the teachers use the CMI network after school hours, indicating they are one of the most enthusiastic and passionate groups of teachers in Hong Kong. Still this group of teachers is not actively engaged in the online discussion, which is unfortunately not yet achievable. The current membership of the CMI web site is registered using school as a unit. All teachers of a school are using the same school account. Would this inhibit the involvement of the teachers in the network? This is one of the questions that the center has to continue to investigate.

The culture of sharing among teachers in Hong Kong is still in its embryonic state. In the online forum of the CMI network, the discussion is restrictively confined to asking superficial questions, bringing up only short interaction. In-depth discussion, exchange of opinions and other intense communications have not yet been achieved. It may be because at the start of CMI network, we have put into the online forum questions raised by the teachers in the workshops, hoping to extend the discussion from face-to-face interaction into the network. However, most of the teachers on the Internet have followed the styles of sample questions, and identified the center as the authoritative judge on Chinese language uses. This has led the discussion to the restricted pattern: a teacher raises a question; the center replies with a tentative answer; and the teacher acknowledges the center. Now we have changed the strategy. The questions brought up by the teachers in workshops are reorganized and modified before putting into the forum. We are still waiting to see whether this will spark more discussion.

## **Conclusion**

The strategy on constructing a web site should be flexible and responsive to the need of the particular audience. This paper reports the establishment of a teacher network, supporting educational changes. The teachers' need is actually changing as time goes. Our survey conducted in 1998 indicates the urgent need of the teachers in the support of typing Chinese. As such, we have run a series of workshops about using Chinese computer. However, in 1999, the interviews with teachers show that most of the teachers have already found his/her way in solving the typing problem. Some of them have already been able to use Chinese word processing tools at a comfortable level. Because of this, the demand of web resources for teaching and subject language use has become the most urgent need of the teachers. Therefore, the construction of a web site should follow a practice-and-reflect iterative way of development to enable an organic growth of the network.

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