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## Learning Internal Chinese Medicine by Clinical Cases – Development of a Video and Multi-media System for Teaching

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### Abstract

*This project included 12 kinds of common diseases of Internal Chinese Medicine (ICM), as well as Chinese medical diagnosis, pathological analysis, treatment methods of Chinese medicine, prescriptions of Chinese medicine and differential diagnosis of Chinese medicine. The purpose of this project is to increase the interest of students on learning of ICM, to deepen their understanding of clinical diseases of ICM, and to enhance the effects of clinical teaching of ICM.*

### Key words

Internal Chinese medicine (ICM), ICM students

### Introduction

Internal Chinese Medicine is a clinical professional course, the main part of the Chinese Medicine course and the foundation of the various courses in clinical studies. The teaching and research standards of Internal Chinese Medicine reflect those of Chinese Clinical Medicine.

This project aimed to produce a video production and a multi-media package to enhance the teaching effectiveness of the course *CMED 3122: Internal Chinese Medicine*, which is offered by the School of Chinese Medicine. These will greatly help students to establish a solid professional foundation in the area and to be nurtured as Clinical Chinese Medical practitioners

of high quality. Moreover, since there is no base for practice for Clinical Chinese Medical teaching in Hong Kong and a lack of multi-media tools for teaching Internal Chinese Medicine in Mainland China, the video production and the multi-media package produced in this project will become extremely important tools to facilitate teaching of Clinical Internal Chinese Medicine at HKBU. They can fill the gap caused by the absence of this kind of material in the exemplary teaching of Clinical Internal Chinese Medicine.

### Aims and Objectives

The project aimed to produce a video and multi-media software for teaching the course *CMED 3122 Internal Chinese Medicine*. This course introduces the basic concept of pathological mechanisms according to the fundamental theories of Chinese medicine. Fifty-five kinds of internal diseases or syndromes can provide students with the necessary knowledge for treating internal diseases. The investigator taught this course and perceived that the students of the School of Chinese Medicine urgently needed some kind of software to increase the interest of students in learning ICM, to deepen their understanding of clinical diseases of ICM, and to enhance the effects of clinical teaching of ICM.

### Methodology

- Using the Macromedia Authorware to write the infrastructure of the software
- Writing scripts of description on 12 kinds of internal diseases or syndromes
- Mouse-click the related information on

types of internal diseases or syndromes to show the definition, historical information, Chinese medical diagnosis, pathological analysis, treatment methods of Chinese medicine, prescriptions of Chinese medicine and differential diagnosis of Chinese medicine.

- Interactive real-time multiple choices exercise
- Audio-visual clinical demonstration video package
- Producing a computer file for teaching [Disk characteristic: CD-ROM is attached]

The System requirements: Windows 2000/XP or above version, Pentium III 600Mhz or higher processor, 64MB RAM or higher, SVGA display adaptor at 800 × 600, CDROM or DVDROM Drive, Sound card.

### Contents of the Software

The software was produced for 12 kinds of common diseases in Internal Chinese Medicine, namely headaches (頭痛), vertigo (眩暈), cough (咳嗽), stomachache (胃痛), diabetes (消渴), insomnia (不寐), depression (鬱證), heart-throb (心悸), back-pain (背痛), stroke (中風) and consumptive disease (虛勞).

A common format for each of the common diseases has been designed which contains the following sections:

1. Definition (定義): to provide a brief theoretical background of the diseases
2. Historical process (源流): to provide

- a brief historical background of the diseases
3. Different diagnosis (鑒別): compare the difference between two diseases with similar syndromes
  4. Treatment (證治): to provide table form notes about the treatment of the disease.
  5. Case studies (病案實例): to provide an Audio-visual clinical demonstration video of the disease for the student to learn the clinical skills. The run time for each audio-visual clinical demonstration video part is approximately 4-5 minutes. Commentary is in Cantonese.
  6. Exercise (練習): to provide an interactive real-time multiple choices exercise

### Results/Findings

We discovered that students did not want to look at screen after screen of text. Lots of text is physically tiring on the student's eyes even with an accompanying audio track. Therefore, we designed the Audio-visual clinical demonstration video. It provides a place for the student's eyes to rest and relax. Visuals also have an added cognitive benefit; they explain difficult ideas and illustrate relationships between concepts, especially clinical skills which are difficult to put over through a normal lecturing approach. The Visuals arrange information in the appropriate order and increase the chance of student's retaining and comprehending what is being taught. For example, students can take time to review the materials before going to the

clinic to acquire real hands-on experience.

We apply the following tips in the software:

- Include a screen of yourself on the first frame. Learners want to know who is speaking.
- Keep the visuals relevant to the topic.
- Diagrams or tables are great for explaining complicated material.

According to the above findings, we invited some graduated CM students to help design this software and their suggestions were taken into account. In this way, the enhancement of teaching and learning was achieved through these consultative interactions.

Students feedback was obtained in the first semester of the 2005-2006 academic year by using a questionnaire after a trial run with the year-three students. By using this software, there is no doubt students' learning effectiveness opportunities will be increased and it will be a useful tool for lecturer's explanations and for examination purpose.

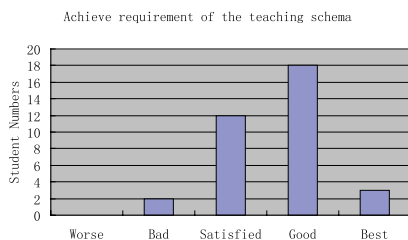


Figure 1. Achieve requirement of the teaching schema

## Studies on Teaching and Learning

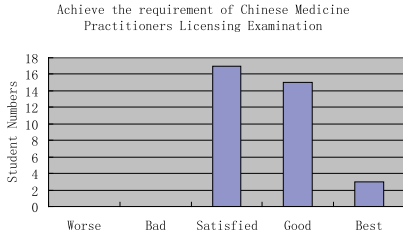


Figure 2. Achieve the requirement of Chinese Medicine Practitioners Licensing Examination

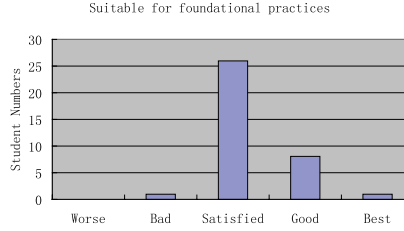


Figure 5. Suitable for foundational practices

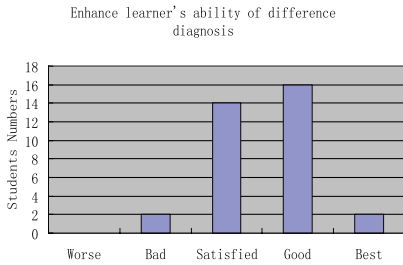


Figure 3. Enhance learner's ability of difference diagnosis

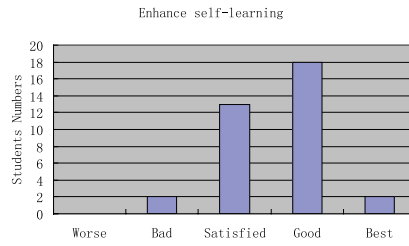


Figure 6. Enhance self-learning

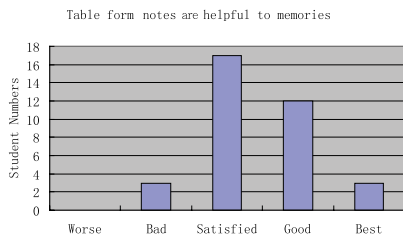


Figure 4. Table form notes are helpful to memories

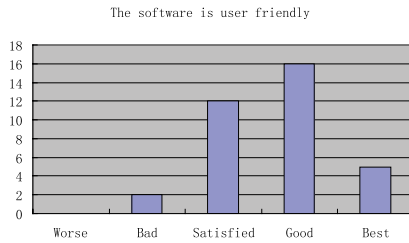


Figure 7. The software is user friendly

Note: Copyright in the software belongs to HKBU.

### **Discussion**

The software produced will greatly enhance the learning effectiveness of the students in the course on Internal Chinese Medicine. It will help CM students to memorize and handle the materials and clinical skills in Internal Chinese Medicine. The software will continue to bring life-long benefits to the students, even after they become Chinese medicine practitioners. The software is a highly creative endeavor in the field of Chinese Medicine. It can serve as very valuable reference materials for those who are teaching in the field of Chinese Medicine, and very useful resource materials for those who are practicing or interested in the field of Chinese Medicine.

### **Enhancement on Teaching and Learning**

A lack of interest in Chinese medicine among undergraduate students is not just a problem for Hong Kong universities, but a concern for educators worldwide. To motivate the learning attitude of the students is a challenge to all teachers and university faculty. The productions of a video and multi-media software are a reasonable solution to increase student interest. We have used the software in our Internal Chinese medicine lessons. The real life nature of the clinical cases built up in the software enables the students to appreciate the power of clinical skills in diagnosis and treatment strategy. The movie files made the class presentation more appealing to the students and they have started to feel the "fun of learning", especially for students who have grown

up in the internet age. To most young students, the fun of learning science appears to be closely related to how well the materials being taught can be directly connected to things that would impact their daily lives and future careers. In this connection, we are pleased to see the availability of this teaching tool through the provision of the Teaching Development Grant that has vividly illustrated and highlighted the fun and practical aspect of Chinese medicine to the students.

Students feedback was obtained in the first semester of the 2005-2006 academic year by using a questionnaire after a trial run with the year-three students. There is no doubt that the software increased students' learning effectiveness and it will be a useful tool for lecturer's explanations and for examination purposes.

In general, the students agree that the software can

- Strengthen their understanding of the theory of ICM
- Achieve requirements of the course plan
- Achieve the requirements of the Chinese Medicine Practitioners Licensing Examination
- Enhance learners' ability in diagnosis
- Assist them to understand clinical skills
- Extend their knowledge to other real-life case studies

### Limitations/Difficulties

We were fortunate to be able to recruit students of the Department to serve as student helpers. They had sufficient Chinese medicine knowledge to help us to prepare most of the content of the software. However, their computing skills were not up to professional standards. Also, due to limited TDG funding, we were unable to buy the official and original software (we used the trial version), unable to take high quality video in hospitals, and unable to recruit a project assistant to handle the technical problems.

As a result, the content of the software certainly has room for improvement. If we can secure a bigger budget for the project, we would like to build up more clinical cases, recruit a project assistant to handle the technical problems and use the official and original software. It may then be possible to publish the results.

### Conclusion

Development of a video and multi-media software training package was the first attempt of the Department to make available a multi-purpose teaching aid for undergraduate students in the School of Chinese medicine. We shall follow up this approach by establishing more interactive teaching methods so as to enhance the teaching and learning experience of the staff and our students.

### References

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### Acknowledgements

We would like to thank Clinical Division of School of Chinese Medicine for giving aid and support as well as the patients for taking part in the video recording session.

### Graphics



Graphic 1.  
The index of Internal Chinese Medicine software



Graphic 2. The content of Internal Chinese Medicine software



Graphic 5. Case studies(病案實例): to provide an Audio-visual clinical demonstration video of the disease for the student to learn the clinical skills. The run time for each audio-visual clinical demonstration video part is approximately 4-5 mins accompanied with Cantonese.



Graphic 3. The historical information of headache disease in the Internal Chinese Medicine software



Graphic 6. The screen of the interactive real-time multiple choices exercise



Graphic 4. The table form notes of treatment of headache in Chinese Medicine



Graphic 7. The screen of the interactive real-time multiple choices exercise





Graphic 8.  
The HELP session of the Internal Chinese Medicine Software.

## Appendix:

### Questionnaire on the Video and Multi-media System for Teaching

#### 《中醫內科學》教學光碟使用意見 回饋問卷調查

首先多謝閣下使用中醫內科學教學光碟！由於中醫內科學教學光碟出版不久，編者尚未在使用過程中積累成熟的經驗，因此本光碟難免有不妥之處，敬請批評指正，以便再版時修訂提高。

#### 第一部份：

教學內容部份(0分最低分，5分最高分)

1. 本軟件內容是否合乎現有的教學計劃和考試大綱的要求？  
1 2 3 4 5
2. 本軟件的教學內容是否切合中醫執業試的所需要求？  
1 2 3 4 5
3. 本軟件的編排(即基本概念、病證鑒別、證治表解、練習題)能否便於使用者複習中醫內科學？  
1 2 3 4 5
4. 本軟件的病證鑒別部份是否有助提高使用者對常見病的鑒別能力？  
1 2 3 4 5
5. 本軟件的圖表講義是否有助於學習記憶？  
1 2 3 4 5

6. 本軟件是否適合作為標準化試題為主的基礎訓練？  
1 2 3 4 5
7. 本軟件練習題的難度是否過高？  
1 2 3 4 5
8. 本軟件能否幫助使用者鞏固和提高所學的基礎理論和專業知識？  
1 2 3 4 5
9. 本軟件的視象教學能否提高使用者四診運用的能力？  
1 2 3 4 5
10. 本軟件的視象教學內容是否切合臨床所需？  
1 2 3 4 5
11. 本軟件是否適合自修學習？  
1 2 3 4 5
12. 其他意見：  
\_\_\_\_\_

#### 第二部份：

軟件應用部份(0分最低分，5分最高分)

13. 本軟件操作介面是否清晰？  
1 2 3 4 5
14. 本軟件所提供的幫助說明是否足夠？  
1 2 3 4 5
15. 本軟件所提供的幫助說明是否容易應用？  
1 2 3 4 5
16. 本軟件是否容易應用？  
1 2 3 4 5
17. 本軟件視象教學部份的影象是否清晰？  
1 2 3 4 5
18. 本軟件視象教學部份的收音是否清晰？  
1 2 3 4 5
19. 本軟件的運行是否穩定？  
1 2 3 4 5
20. 本軟件練習題部份的互動程度是否足夠？  
1 2 3 4 5
21. 本軟件的安裝說明是否清楚？  
1 2 3 4 5
22. 本軟件的外型是否美觀？  
1 2 3 4 5
23. 本軟件所須系統要求是否過高？  
1 2 3 4 5
24. 其他意見：  
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