

Comparison of Chinese Medicine Education and Training in China and Australia

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Abstract

The similarities and differences between Chinese medicine (CM) education in China and Australia are considered in a detailed comparison of the five-year undergraduate programmes offered by the Beijing University of CM (BUCM), China and RMIT University (RMIT), Australia. BUCM is a specialist CM institution whereas RMIT is a technological university providing training in a wide range of professional areas. Both institutions are considered to be leading tertiary institutions within their respective countries. A brief account of the historical development of CM education in China and Australia is provided. We have compared the curricula and structure of the programmes and how they each address the development of essential graduate capabilities for competent and safe clinical CM practice. We have also considered the quality assurance processes and the requirements of external regulatory authorities. The curricula and educational objectives of the 2 programmes are broadly similar. Both institutions have established rigorous processes for managing teaching quality and ensuring appropriate graduates to promote evidence-based CM practice. However, there are differences relating to the healthcare systems of China and Australia and to the availability of teaching resources and clinical training facilities such as classical CM texts and CM hospitals. These differences present major challenges for the internationalisation of CM education. The findings of this study may facilitate the process of CM curriculum development in a global context.

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Introduction

Chinese medicine (CM) has a long history in China and in a number of Asian countries.¹⁻⁵ Over the last 3 decades, CM has been gaining a foothold in the Western world, including Australia. More recently, CM education has been introduced into the public-funded higher education system in a number of Western countries. Australia has been at the forefront of such developments with RMIT University in Melbourne introducing a five-year double degree programme, Bachelor of Applied Science (Chinese Medicine)/Bachelor of Applied Science (Human Biology), in 1996.

This review compares CM higher education in China and Australia to identify similarities and differences in objectives, curriculum development, and programme quality assurance processes. It also highlights challenges for the internationalisation of CM practitioner training and the

integration of CM practice within established national healthcare systems outside China.

Materials and Methods

Our considerations are based on programme documents provided by the 2 institutions concerned and discussions with CM regulatory authorities in China and Australia. In particular, we had in-depth discussions with academics from the Beijing University of Chinese Medicine (BUCM) and RMIT. We also reviewed relevant documents issued by the World Health Organization, the Ministry of Health, China, the State Administration of Traditional Chinese Medicine (SATCM), China, the Chinese Medicine Registration Board of Victoria, Australia (CMRBVic), and the Victorian Government Department of Human Services. The review compares the history, development, educational objectives, curricula, teaching delivery and

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quality assurance procedures for the five-year undergraduate CM programmes in China and Australia.

History of CM Education in China and Australia

Formal CM training in China commenced in 624 A.D., during the Tang Dynasty (618-907) under the authority of *Tai Yi Shu* (the Imperial Medical Bureau) with a sole focus on training imperial physicians in various fields of medicine.^{4,6,7} Subsequently, during the Song Dynasty (960-1279), CM training was managed by *Tai Yi Ju* (the Imperial Medical Ministry).

In 1913, the All-China Society for Traditional Chinese Medicine was founded and a Central College of Chinese Medicine was established in 1930.⁷ CM education in the public tertiary system commenced in 1956 when the first 4 CM colleges were established.^{4,7,8} In 1962, the first edition of national standard CM textbooks was published as the core curriculum for all CM degree programmes in China. There were no significant developments in CM education during the 10 years of the Cultural Revolution, from 1966 to 1976.¹ In 1977 and 1978, CM undergraduate and postgraduate programmes were re-offered in Chinese tertiary institutions. In 1983, doctoral programmes were introduced by a number of institutions.⁷

A unique characteristic of CM education in China is the integration of CM and modern Western medicine, which commenced in 1958.⁹ Under the integrated training framework, Western medical doctors are required to complete a minimal level of training in CM whereas CM practitioner training is underpinned by Western medical sciences. By 1962, all CM colleges were offering a curriculum which consisted of 2 years of training in Western medicine, followed by 2 years of CM training followed by a 1-year internship in both CM and Western medical hospitals.⁹ Over the last several decades, training programmes in both Western medicine and CM have evolved such that currently, all Western medical universities in China offer electives in CM and about 35% of curricula in CM programmes are allocated to basic medical sciences and clinical Western medicine.

In contrast to its long history in China, CM practice was only introduced into Australia in the 1840s when Chinese immigrants were attracted to the country by the discovery of gold in Victoria and other Australian states.¹⁰ More than a century later, when Chinese migrants entered Australia in increasing numbers due to the introduction of a national policy of multiculturalism in Australia, Chinese herbal medicine began to win wider acceptance in the community.

In the early 1970s, the first acupuncture colleges were established in Sydney, Brisbane, and Melbourne.¹¹ In 1992, Victoria University of Technology founded its Bachelor of Health Science (Acupuncture) programme and, in 1996,

RMIT introduced the first comprehensive degree programme in CM, which included training in both acupuncture and Chinese herbal medicine. The RMIT programme involves a partnership with the Nanjing University of Chinese Medicine.

Current Status of CM in China and Australia

In China, CM practice has been fully integrated into the national healthcare system with traditional herbal therapies representing 30% to 50% of all medicines.¹² About 70% of Chinese provinces have dedicated CM hospitals, there being approximately 1800 nationally. In addition, about 90% of community healthcare centres provide CM consultation and pharmacy services.¹³

The Regulations of the People's Republic of China on Traditional Chinese Medicine, issued by the State Council of China in April 2003,¹⁴ state that the government will take necessary measures to promote ongoing development of CM education. The regulations also stress the importance of fundamental CM theories, integration of CM theory and clinical practice, and provision of effective quality assurance of CM education. The Chinese Ministry of Health, in its policy titled *Essentials of Medical Education Reform and Development in China*¹⁵ highlights the importance of tertiary-level CM education and reinforces the need to integrate CM with modern science and technology.

Currently, there are 32 specialist CM universities in China, with a total annual intake of approximately 16,000.¹⁶ In addition, 58 other tertiary institutions have CM departments.¹³ Furthermore, 25 institutions provide masters degree programmes; 14 provide doctorate degree programmes; and 15 offer postdoctoral research training in CM.¹⁶ In addition to tertiary institutions, 51 technical colleges across the country provide CM studies.¹³

A recent government report has highlighted the importance of a highly qualified medical workforce, which was to be achieved by the introduction of 8-year combined undergraduate and postgraduate programmes for Western medical training. There has also been significant progress towards the development of similar programmes in CM.¹⁷

Although not as prevalent as in China, in Australia, the popularity and demand for CM is increasing.¹⁰ This has resulted in the publication of the report titled *Traditional Chinese Medicine: Report on Options for Regulation of Practitioners* in July 1998,¹⁸ and the introduction of the Chinese Medicine Registration Act 2000 by the Victoria Parliament in May 2000. The Act made Victoria the first state in the Western world to introduce statutory regulation of CM.¹⁹ The provisions of the Act are administered by CMRBVic, which was established in December 2000. One of the key responsibilities of CMRBVic is to approve CM practitioner training programmes. In August 2002, the

CMRBVic promulgated the document *Guidelines for the Approval of Courses of Study in CM as a Qualification for Registration*.¹⁹

In Australia, the integration of CM and Western medicine is still in its infancy. In 2005, in a collaboration with the Northern Hospital in Melbourne, RMIT senior CM students started providing acupuncture services to appropriate patients (mainly acute pain patients) attending the emergency department of the hospital. This has been well received by both patients and physicians in the hospital.

CM Tertiary Education in China and Australia: BUCM vs RMIT

With the globalisation of CM, there has been growing worldwide interest in CM education and training. China has made major progress towards effective integration with Western medicine in both education and clinical practice. Australia has a respected, well-established healthcare system, and one which has recognised the need for appropriate regulation of complementary therapies such as CM. The 2 countries have a common goal of promoting harmonisation and integration of Western medicine and CM.

BUCM Programme in China

CM tertiary education in China has undergone 50 years of development. Currently, there are a series of programmes on offer: 3-year diploma; 5-year bachelor degree; 7-year combined bachelor and masters degree; and postgraduate research programmes. Students may major in Chinese herbal medicine, acupuncture, *tuina* (Chinese remedial massage) and Chinese herbal pharmacy. Generally, training programmes in China include substantial biomedical sciences and significant proportion of clinical training integrated with Western medicine. Below, we analyse the five-year programme at BUCM.²⁰

Objectives: In June 2005, BUCM restructured its 5-year flagship programme to fulfil requirements of the national education guidelines for CM education and training²¹ and to meet the expectations of all stakeholders including students, employers, other healthcare professions and governments. BUCM considers that its mission is to produce graduates who:

- have a solid grounding in the basic theories, knowledge and skills necessary for CM practice;
- have the potential for ongoing career development;
- are innovative and critical;
- are knowledgeable and lifelong learners; and,
- are adaptive to the changing needs of society.

Curriculum design: The curriculum is intended to develop integrative professional knowledge and skills in CM practice. BUCM's 5-year bachelor degree curriculum

emphasises generic skill development, addresses employment needs, and focuses on graduate capability building. The programme also includes subjects for generic skill development, core and elective subjects and supervised clinical practice.²¹

At BUCM, each semester has 18 teaching weeks and 2 examination weeks. Over the 5 years of the programme, students are required to complete a total of 2856 hours on compulsory theoretical studies, 468 hours on electives and 48 weeks of clinical practice.

Teaching and learning: Diverse teaching methods are employed, including classroom activities such as lectures, laboratory sessions, group discussions, seminars, computer-assisted teaching and learning, and integrated clinical practicums. Students at BUCM undertake a range of formative and summative assessments involving multiple-choice examinations, essay writing, case studies and laboratory reports. Before graduation, students are required to take the final theory and clinical examinations to demonstrate their theoretical understanding, practical skills, meta-cognitive skills and attitudes.

Education quality assurance: Each semester, the teaching staff at BUCM collect feedback from students, colleagues and an expert committee concerning teaching quality. The data are used to assess the individual and team teaching quality for ongoing improvement and planning.

RMIT Programme in Australia

Generally speaking, educational programme development in Australian universities is guided by *Universities and Their Students: Principles for the Provision of the Education by Australian Universities* developed by the Australian Vice-Chancellor's Committee in December 2002. For professional health-provider programmes, universities also need to meet the requirements of relevant statutory health practitioner registration boards. For CM programmes, in the State of Victoria, the CMRBVic has issued guidelines for CM training programmes – *Guidelines for the Approval of Courses of Study in Chinese Medicine as a Qualification for Registration*. The guidelines stipulate the ratio of specific CM subjects in a programme to other relevant content.¹⁹

In Australia, CM is a form of a non-conventional therapy. There are no CM hospital training facilities and most graduates of CM training programmes work as primary contact health practitioners in private CM clinics. CM practitioners are required to be familiar with the broader Australian healthcare context.

Objectives: In 1996, RMIT introduced its double degree CM programme. The programme is intended to produce graduates who meet the professional requirements necessary for the safe practice of acupuncture and Chinese herbal

medicine in a multi-cultural and multi-ethnic community, and in a context in which CM is considered a complementary health service. The recently restructured curriculum at RMIT is capability-driven, with the key objectives being to produce graduates with high levels of technical and communication skills, who are capable of responsible and sustainable practice, and who have research and information management capabilities.

Curriculum design: Programmes at RMIT have a strong vocational focus. For its double degree CM programme, RMIT has created a capability-driven curriculum, embedding generic skills and professional training. The programme has 10 semesters, each of 17 weeks' duration (13 teaching weeks, 1 mid-semester study week and 3 examination weeks). The programme consists of 1183 teaching hours for CM theory, 1066 for medical science, 299 for professional studies and research methods, and 1118 hours of clinical training, including one semester at the Teaching Hospital at the Nanjing University of CM, China.

Teaching and learning: RMIT has a well established system to support student learning, including the availability of university open workshop programmes and an on-line learning system known as the Distributed Learning System, for accessing course information, and course materials. A library database, inter-library loan system and hands-on support are provided to assist student learning. RMIT applies a range of assessment methods including assignments, team projects, laboratory reports, case studies, written examinations and clinical skills assessment.

Education quality assurance: As at BUCM, students at RMIT are expected to evaluate their lecturers' performance and teaching quality by completing a Course Experience Survey at the end of each semester. In addition, Student:Staff Consultative Committees and Programme Advisory Committees are mandatory for all programmes. Moreover, 3 months after graduation, all graduates of all universities in Australia assess the overall quality and learning experience through a national Course Experience Questionnaire, the outcomes being freely available on the World Wide Web and being used as a universal measure of good teaching by the Commonwealth Government.

Discussion

Despite the variation of historical development, CM education in China and Australia has common characteristics in curricula design, teaching modes, assessment and quality management. This is largely due to the common educational objectives being producing CM professionals for safe and competent clinical practice and promotion of evidence-based CM development. Differences mainly relate to different social and cultural contexts, healthcare

systems and resources for CM education and training.

Both BUCM and RMIT have an emphasis of graduate capabilities to ensure the employability of their graduates. To achieve this, both programmes allocate significant proportion of their curricula for CM theory studies, basic and clinical Western medical coverage as well as integrative clinical training. Although the class contact hours at BUCM (3375 hours) are approximately 30% more than that of RMIT (2548 hours), the weekly loads at the 2 institutions are similar. BUCM has a longer semester and more electives in areas such as physical education and foreign language studies that are not compulsory components in Australian higher education.

Concerning clinical education, BUCM has a longer duration (48 weeks) than RMIT (28 weeks). However, this is largely due to the nature of the clinical training and availability of clinical training facilities such as CM hospitals. To compensate for this, all RMIT students attend a one-semester advanced clinical training at a teaching hospital in Nanjing.

Like RMIT, BUCM highlights the importance of evidence-based CM development in their teaching and research to raise the awareness of CM in other healthcare professionals and to promote integration.²²

BUCM places more emphasis on traditional CM theory and classical literature (288 hours) than does the RMIT CM programme (91 hours). CM education at RMIT is conducted in English, and the majority of RMIT CM students are Caucasian. Thus reading original classical Chinese texts becomes impractical. Furthermore, there is a limited number of quality English texts available in classical CM.

RMIT programme has more practical subjects, such as case studies, practical workshops, professional studies, research methods and projects, which are intended to empower graduates to develop their practical skills and critical thinking, to engage in research and to practice as sole providers. In addition, the RMIT programme also places more emphasis on acupuncture and general healthcare subjects such as dietary and exercise therapy.

RMIT provides students with a more supportive learning environment and more opportunities to develop broader interests through access to on-line learning, an e-journal club, video-conferencing, extensive library resources and access to relevant databases. At RMIT, student assessments may go beyond programme content,²³ e.g., essay writing and class presentations, which require students to read extensively and reflect on what they are being taught.

RMIT uses a mixture of norm-referencing and criteria-referencing methods to determine student grades. They describe students' achievement or progress against predefined criteria rather than assessing each programme

component with a single task. Generic skills such as critical thinking, problem solving, information literacy, effective communication and teamwork are integrated into teaching and evaluation, achieving a paradigm shift from teacher-centred instruction to student-centred learning and from knowledge-oriented teaching to skill-oriented learning.

In contrast to RMIT, BUCM has much more specialist human and physical resources to support their programmes. For institutions in the West that train CM practitioners, such as RMIT, language and cultural barriers, the limited number of highly qualified academics, limited CM teaching resources in English and lack of clinical training facilities are major challenges.

Conclusion

CM education in the West shares a number of common features with that in China, such as its clear educational objectives, its focus on graduate capability, and its promotion of evidence-based CM development. However, there are a number of challenges that are yet to be addressed, including inadequate human and physical resources, particularly clinical teaching facilities. For programmes in China, the lack of a “holistic” approach for balancing acupuncture with other modalities, as well as inadequate research training and professional studies, will weaken the ability of graduates to practice effectively in complex healthcare systems such as that in Australia.

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