

行政院及所屬各機關出國報告
(出國類別：開會、訪問)

參加第一屆台澳高等教育會議報告
強化台澳國際文教關係的新里程

服務機關：教育部 高教司 技職司 文教處 文教處
出國人職稱：次長 副司長 專門委員 處長 科員
姓名：呂木琳 張國保 周明華 李振清 房庾靖
出國地區：澳大利亞
出國期間：九十一年四月五日至四月十二日
報告日期：九十二年六月

c9/
c09102908

系統識別號：

頁數：365

附件：

出國報告名稱：第一屆台澳高等教育會議報告：

主辦機關：教育部

聯絡人 / 電話：馬淑珍 / 2356-6907

出國人員：姓名 / 服務機關 / 單位 / 職稱

呂木琳	教育部	次長室	次長
張國保	教育部	高教司	副司長
周明華	教育部	技職司	專門委員
李振清	教育部	文教處	處長
房庾靖	教育部	文教處	科員

出國類別：開會及其他

出國地區：澳大利亞

出國期間：九十一年四月五日至四月十二日

報告日期：九十二年六月

分類號/目：C / 國際文教關係

關鍵詞：高等教育、教育國際化、行政管理、立法架構、品質保證、公立和私人

內容摘要：由於近年來我國前往澳洲留學或遊學之學生人數不斷成長，而雙方教育高層主管、大學校長、學者專家及各級學校師生互訪亦逐漸增多。為加強兩國教育交流與合作，我國與澳洲經過兩年多的籌備與規劃，終於在二〇〇二年四月八日和九日假南澳阿得雷德 Radisson Playford Hotel 隆重召開第一屆中澳高等教育會議。所有與會者均盼望透過此項會議，增進彼此接觸與瞭解，並促成雙方意見交流和創意激發，呈現我國高等教育之實施現況和具體成果；分享中澳兩國高等教育及學術研究之實際經驗；促進中澳高等教育方面之相互觀摩學習；建立中澳兩國大學間之良好合作關係；體認高等教育發展之新趨勢，思索如何因應未來全球化之趨勢；瞭解澳國科技研究之成果；探討如何在重點科技研究上建立互惠互利之合作關係；增進兩國實質文教關係，促進學術外交。

本文電子檔已上傳至出國報告資訊網

目錄

	頁碼
一、 強化台澳國際文教關係的新里程.....	1
二、 會議之緣起及目的.....	2
三、 會議前後我方代表團活動日誌.....	6
四、 中澳高等教育會議引發的迴響與未來願景.....	15
五、 The Inspiration and Vision of the First Australia Taiwan Higher Education Conference.....	18
六、 附錄：大會論文彙編.....	29

強化台灣與澳州國際文教關係的新里程

第一屆台澳高等教育會議報告

Australia Taiwan Conference On Higher Education

在全球邁向二十一世紀之際，不可避免的衝突如美伊戰爭，與呼之欲出的新氣象如歐盟(EU)和亞太經合會(APEC)，正不停地勾勒出世界發展的軌跡。政治的紛擾、社會的不安、人心的不寧、經濟的起落、未來的不確定，在在顯現當前世界的亟須調適。自古以來，這種週期性的輪迴，只有借助周全宏觀性的國際化教育來拓展心智、返璞歸真，方能振衰起敝、力挽狂瀾。對處於世紀轉捩點的台灣而言，教育部國際文教處的使命(Mission)與願景(Vision)，正扮演著一項常人不輕易看到的任務：藉多元國際文教交流的領航角色，凸顯台灣實質的國際認同與地位。公元 2002 年的首屆「台灣－澳洲高等教育會議」在南澳亞德雷市(Adelaide, South Australia)的順利召開，就是一項很特殊的跡象。

今(2003)年元月底，協同主持是項會議的教育部次長 Peter Shergold 博士，為澳洲總理何華德(John Howard)晉升為「總理及內閣部文官長」。連同澳洲政府裡與我國教育部國際文教處主管關係頗佳的眾多官員，一種超越政治的新關係正循著學術合作與文教交流建構起來的默契，拉近台灣與澳洲的距離。本報告綜合第一屆「台灣－澳洲高等教育會議」前後的世局發展加以陳述，也因此深具重要的參考價值。

早在一九九九年九月十七日，澳洲前總理 Paul Keating 曾應邀來台訪問。教育部國際文教處處長李振清曾在當天中午的演講會中與他有過意義深遠的短暫對話。其中最主要的是實質外交與國際文教交流的關聯性，以及台灣在邁向二十一世紀時所應考量的多元國際因應策略。Paul Keating 前總理的箴言，在當年九月十八日的台北時報(Taipei Times)上，有詳實的報導。

一年後，亞太地區屬於 APEC 國際組織的二十一國教育部長集會於新加坡，藉第二屆「APEC 教育部長會議」(2nd APEC Education Ministerial Meeting)之重要場合，共同倡導新世紀的教育改革、教學革新與永續發展之道。美國的教育部長 Richard W. Riley 及澳洲教育部長 David Kemp，會同包括我國楊前教育部長朝祥在內的各國教育主管，共同深入探討「二十一世紀學習型社會之教育」主題下的嶄新教育榮景。其中主要的一項是「國際教育的交流與合作」。在全程會議

中，澳洲的 David Kemp 部長及政務次長 Steve Sedgwick 正好與擔任 APEC HRD Education Network 國際協調人的筆者比鄰而坐，因而對許多重大的教育國際化討論議題，觀點極為一致。雖然 David Kemp 部長，Steve Sedgwick 次長的立論與 Keating 前總理未必有事前的協調，但澳洲的教育改革政策與台灣邁向學習型社會及國際化教育的願景，卻毫無二致。也許這就是為什麼澳洲跟台灣愈走愈近的主因之一。

第一屆「台澳高等教育會議」（又稱「中澳高等教育會議」）在南澳的順利、圓滿舉行，正好為兩國之間的嶄新關係做了最直接的陳述。為了提供國內各界往後進一步發展兩國之間的多元關係之參考，國際文教處同仁房庚靖先生會同駐澳文化組組長陳東榮博士，特將會議中討論的全部資料及媒體報導，仔細彙整於後。第二屆「台澳高等教育會議」將於 2004 年在台北舉行。在全球各國倡導教育國際化、追求高等教育品質以提昇國家競爭力之際，「中澳高等教育會議」的功能與價值，確是值得重視的。

會議之緣起及目的

一九七二年我國在澳洲首都坎培拉設立代表處以來，兩國在各方面的交流互動日趨頻繁。在教育方面，我國前往澳洲留學或遊學之學生人數不斷成長，而雙方教育高層主管、大學校長、學者專家及各級學校師生互訪亦逐漸增多。

我國自一九九一年起加入的國際組織「亞太大學交流會」（University Mobility in Asia and the Pacific - UMAP），澳洲即為主導國家之一。為加強兩國教育交流與合作，我國與澳洲分別於一九九六年五月二十七日至二十九日及一九九八年三月二日至三日在澳洲墨爾本和我國桃園（元智大學），召開雙邊技職教育與訓練會議，並獲具體成效。

為能持續推動兩國文教交流，我駐澳代表處劉前代表伯倫曾向澳方相關人士建議繼續主辦雙邊教育會議，並獲「澳洲大學校長委員會」（Australian Vice-Chancellors Committee - AVCC）支持。澳洲聯邦教育部對此建議曾予慎重考慮。經過兩次初步預備會議，並徵詢我方意見，該部決定支持在澳洲舉辦首屆澳台高等教育會議，並願提供經費補助籌備委員會。

2000 年奧運期間，澳洲教育部政務次長 The Honorable Trish Worth 與我國教育部曾前部長志朗會晤時，當面表示澳洲政府將全力支持此一會議。曾前部長則應允屆時將派團來澳與會。會商後雙方展開籌備事宜，此為該項會議之緣起。

2001年三月澳洲南澳大學(University of South Australia)副校長 Professor Ian Davey 以此項會議籌委會召集人之身份訪問我教育部，說明將於澳洲阿得雷德(Adelaide)舉辦中澳第一次高等教育會議，呂次長木琳於接見時表示我國將全力支持。同年七月下旬，我教育部范政務次長巽綠訪問澳洲，與聯邦教育部常務次長 Mr Steve Sedgwick 會商時，表示我國樂見澳洲教育部將傾力支持預訂於2002年四月假南澳舉行之中澳高等教育會議，並期望此次會議可以實質增進兩國文教關係。

雖然中澳兩國大學交往互動機會日益增加，若干大學並已相互簽定合作備忘錄，然而實際進行交流與合作之案例尚未普遍，主要乃因一九七二年中澳斷交後，兩國幾無交流，彼此長期隔閡，缺乏瞭解所致。一九九二年，我國在澳正式設處，兩國關係日益改善，並趨活絡。如今澳洲願意主辦雙邊高等教育會議，擬進一步推動兩國文教關係，探討實際可行之合作交流方案，可謂意義重大。

目前澳洲高教界和台灣一樣，均面臨經費不足等難題，然而由於以往基礎深厚，尚能維持一定水準，並有不錯口碑。大抵言之，澳洲高等教育在生化科技、資訊工程、農業養殖、環境保護、天文地質、觀光餐旅、海洋生物、都市規劃、企業管理、國際貿易、航太發展、醫學研究和英語師資培育等領域頗具特色，值得我國與之交流合作，以收互惠互利之功。

2001年九月，我教育部為推動辦理參加第一屆中澳高等教育會議，特地邀請國立大學校院協會理事長陳校長維昭、私立大學校院協進會理事長劉校長源俊、中華民國技職教育協會理事長劉校長顯達以及行政院國科會之代表，共同組成籌備委員會，並由上述高教協會共推國立台灣大學為我方秘書處所在地，負責規劃及辦理我方參加會議相關事宜，並與澳方籌委會及駐澳文化組保持聯繫。我方先後舉辦過三次籌備委員會議，以決定辦理方式及推派我方主講者和講評人。

澳方籌委會成員則包括澳洲聯邦教育、科學暨訓練部(Department of Education, Science and Training)、澳洲大學校長委員會、澳洲在華商工辦事處國際教育處、阿得雷德大學(University of Adelaide)、福林德斯大學(Flinders University)及南澳大學(University of South Australia)之代表。我駐澳代表處文化組陳組長東榮亦應邀加入該委員會。「澳洲大學校長委員會」係由澳洲各大學之校長組成，是大學與政府間之界面組織。籌委會定期在大會秘書處所在地南澳大學舉行會議，商討籌備會議之相關事宜。

為協辦此一重要會議，澳洲聯邦教育部特撥款六萬澳元供籌委會運用；會議進行期間，並委請專業公司將澳方主講者演講內容錄音謄稿，僱用專人譯成中文，以供未能躬逢其盛之人士參考。此外，澳洲

各大學共同出資設立之澳洲教育服務公司 IDP Education Australia、阿得雷德教育中心 (Education Adelaide) 以及南澳台灣同鄉聯誼會亦慷慨解囊，贊助主辦單位，以表共襄盛舉之意。

此次會議主題為：「大學教育及研究品質之控管與追求卓越」
(Quality Assurance and the Pursuit of Excellence on Higher Education & Research)；下分三類議題：

- 一、 研究：資訊科技、生物科技、研究成果商品化
(Research: Information and Communications Technology; Biotechnology; Commercialization)
- 二、 教與學：教育國際化、線上學習、終身學習
(Teaching and Learning: Internationalization; Online Learning; Lifelong Learning)
- 三、 行政與監理：立法架構、品質保證、公立和私人
(Administration and Governance: Legislative framework; Quality Assurance; Public and Private)

經過兩年多的籌備與規劃，首開先例之中澳高等教育會議終於在二〇〇二年四月八日和九日假南澳阿得雷德 Radisson Playford Hotel 隆重召開。所有與會者均盼望透過此項會議，增進彼此接觸與瞭解，並促成雙方意見交流和創意激發。就我國而言，此一互利雙贏之國際文教交流活動將可獲致以下預期成效：

- (一) 瞭解澳洲高等教育特長；
- (二) 呈現我國高等教育之實施現況和具體成果；
- (三) 分享中澳兩國高等教育及學術研究之實際經驗；
- (四) 促進中澳高等教育方面之相互觀摩學習；
- (五) 建立中澳兩國大學間之良好合作關係；
- (六) 體認高等教育發展之新趨勢，思索如何因應未來全球化之趨勢；
- (七) 瞭解澳洲科技研究之成果；
- (八) 探討如何在重點科技研究上建立互惠互利之合作關係；
- (九) 增進兩國實質文教關係，促進學術外交。

台澳雙方出席此次會議之人數總計一百人。我方出席代表以台大陳校長率領之公私立大學校長及教授代表團團員為主。呂次長木琳率領張代司長國保、國際文教處李處長振清、技職司周專門委員明華和

國際文教處房科員庾靖則代表我教育部參加。此外，行政院國科會國際合作處楊處長啟航、駐澳大利亞代表處楊代表進添和駐墨爾本辦事處梁處長英斌夫婦亦專程赴會。中央研究院李院長遠哲則應澳洲聯邦政府邀請，以該國貴賓身份出席會議，並在會中發表演講。其他尚有幾位學者係聞訊自費參加。總計我方出席人數超過四十位。

澳方出席人數則多達五十餘位。除澳洲聯邦教育部常務次長 Dr Peter Shergold 所率之代表團外，猶有十多所大學之校長、副校長、教授及相關人員暨其他機構之代表。¹

¹ 澳方出席人員名單如附件一。我方出席人員包括：

台灣大學陳校長維昭（國立大學校院協會理事長）

東吳大學劉校長源俊（私立大學校院協進會理事長）、

屏東科技大學劉校長顯達（中華民國技職教育協會理事長）、

交通大學張校長俊彥、

中央大學劉校長兆漢、

嘉義大學楊校長國賜、

輔仁大學李校長寧遠、

台灣師大簡校長茂發、

華梵大學馬校長遜、

台南師範學院黃校長政傑、

淡江大學張校長竝炬、

成功大學高校長強、

僑光技術學院楊校長濬中、

台南藝術學院黃校長碧端、

雲林科技大學林校長聰明、

元智大學詹校長世弘

中研院物理所吳所長茂昆（國科會前副主委）、

暨南大學商學院許院長和鈞、

中國技術學院講座教授張文雄、

清華大學生科院吳院長文桂、

陽明大學翟研發長建富、

台大醫院許副院長世明、

台大育成中心范主任光照、

台大計資中心林主任一鵬、

台大國際學術交流中心邱主任錦榮、

朝陽科技大學理工學院曾院長耀銘、

淡江大學學術交流中心陳主任惠美、

高雄科技大學潘教授正祥。

此項會議匯聚兩國高教界菁英領袖，共研高教相關議題，誠是難得之機會。會議一共進行兩天，整個議程安排相當緊湊。擔任主講的雙方代表分別就研究、教學、行政與管理三大議題發表論文，內容精彩，言之有物。會議期間，我方與澳方代表熱烈地進行討論以及激盪腦力。根據會後意見調查，出席人員均感收穫良多，並盼今後能夠持續舉辦類此成功之雙邊會議。

為此項會議之籌備與召開，駐澳文化組同仁曾花費許多時間和精力進行溝通、協調與連絡。陳組長並曾多次南下阿得雷德市參加澳方籌委會會議。我代表團抵澳前後，更與各方保持聯繫，務期做好接待工作，並確定會議進行順利成功。

根據日程，我國公私立大學校長及教授代表團主要團員及我教育部代表團團員於四月六日先後抵達澳洲；四月九日會議結束後，陸續分批返國。教育部代表團因雪梨另有要公，會後特自阿得雷德轉赴該市，直到四月十三日止。

謹將我方代表團參加此次會議之逐日活動報告如下，以供參考。

會議前後我方代表團活動日誌

四月五日（週五）

由國立台灣大學陳校長率領之公私立大學校長及教授代表團及由教育部呂次長率領之我教育部代表團於今日搭機啟程，專程來澳參加具有歷史意義之第一屆中澳高等教育會議。

駐澳文化組陳組長東榮與陳秘書幗珍於本日兵分兩路先赴雪梨與阿得雷德，進行接待前置作業。抵達阿得雷德後，陳秘書與當地台灣同鄉聯誼會及台灣同學會幹部連絡，確定翌日接機及其他接待工作皆已安排妥當。陳組長在雪梨則與澳洲聯邦外貿部駐雪梨辦公室官員、長榮與中華兩家航空公司代表、及我駐雪梨辦事處同仁溝通聯繫。夜宿機場附近旅館，以利隔日清晨準時抵達機場接機。

四月六日（週六）

駐澳文化組陳組長清晨即往雪梨機場，與駐雪梨辦事處賴建中處長和林晨富秘書以及澳外貿部禮賓官 Ms Lou-Ellen Martin 會合，準備歡迎首批代表團抵澳。六時許，李院長遠哲和陳校長維昭等代表在 Martin 女士協助下順利獲得通關禮遇，旋即轉向國內機場，搭機前往阿得雷德。

李院長和陳校長一行二十多人抵達阿市時，澳國外貿部官員 Mr Brent Stewart (李院長訪澳期間之隨扈)、文化組陳秘書及當地僑界和留學生代表多人已在機場列隊歡迎。在澳方秘書處安排下，我代表團離開機場後立即進行參觀阿得雷德市區及鄰近風景之活動。眾人在 Mt Lofty Lookout 使用午餐，並居高臨下，俯瞰整個市區及遠處海岸宜人景致。

我教育部代表團及國立交通大學張校長俊彥夫婦於上午九點四十五分抵達雪梨。在澳國海關官員 Mr Cameron Jones、華航澳紐地區閉總經理兆莘及陳組長陪同下，呂次長和張校長等人獲禮遇通關，立刻轉赴國內機場，下午一時三十分抵達阿得雷德。大會秘書處 Mr Kevin Brett (南澳大學國際關係室主任) 及 Ms Virginia Pattingale (南澳大學國際關係室計畫經理) 特在機場迎迓我方代表，並陪同抵達下榻旅館。

卸下行李後，呂次長及張代司長在南澳台灣同鄉聯誼會曾總幹事樹木嚮導下，遊覽阿市著名景點。交大張校長夫婦則由該會江明統副會長陪同參觀阿市市郊海景。晚間該會劉施瑞南理事作東，宴請我教育部呂次長與其他幾位代表。駐澳文化組同仁及南澳鄉親多人亦在旁作陪。

四月七日 (週日)

負責籌辦此次會議之南澳三所大學對遠道而來之我方代表深表重視。在秘書處安排下，與會代表本日參觀阿得雷德市南方 McLaren Vale 葡萄園及酒莊。為表敬意，澳教育部三位官員 (Mr Robert Stevens、Ms Bici Byrnes 及 Ms Melanie Nicholls) 亦全程奉陪。雙方代表利用難得機會聯誼暢敘，無形中對彼此高教體系及改革現況有更進一步了解。

擔任導覽之 Mr Peter Hayes 係澳洲最大製酒公司 Southcorps 之地區經理，曾任職於南澳州政府及 Rosemont 酒廠，對澳洲葡萄酒產業知之甚詳，沿途除介紹南澳歷史地理及人文景觀外，並特別介紹南澳葡萄酒之種類及特色。眾人飽覽 Adelaide Hills 及 McLaren Vale 產酒勝地風景之餘，亦在 Rosemont 酒窖中心參觀製酒及藏酒設備，並淺嚐各類葡萄酒，對之因而多些認識與瞭解。

澳方秘書處在 McLaren Vale 餐廳設宴招待我方代表。籌委會召集人 Professor Ian Davey 特從遠地趕來主持。餐後，返回市區在旅館稍歇之後，眾人準備參加由阿得雷德華裔市長黃國鑫 (the Right Honorable Lord Mayor of Adelaide Alfred Huang) 主辦之歡迎酒會。

出席酒會之中澳貴賓為數頗眾，其中包括南澳前總督 Sir Eric

Neal AC CVO 伉儷，南澳三所大學校長，我僑選立委林政義教授，南澳台灣同鄉會和同學會會長、副會長及重要幹部。緊接黃市長致歡迎詞後，我駐澳代表楊大使進添代表我方感謝澳國政府、澳方籌委會及秘書處、阿得雷德市政府以及南澳鄉親及同學對此次會議召開之支持與協助。在其致詞中，楊代表並略述兩國各方面關係發展之現況，以及舉辦此項雙邊會議之重要性。²

酒會結束後，我方代表團移往馥園餐廳，接受楊代表晚宴款待。駐墨爾本辦事處梁處長英斌，南澳鄉親代表及駐澳文化組同仁亦出席作陪。應當地鄉親之請，中研院李院長、台大陳校長及教育部呂次長均在餐會中上台致詞。

四月八日（週一）

上午九時整，雙方與會代表聚集大會會場 Radisson Playford Hotel，參加第一屆中澳高等教育會議開幕式。首先由南澳州前總督 Sir Eric Neal AC CVO 爵士致歡迎詞。Sir Eric 現任福林德斯大學董事會主席，歷年來對南澳政經、農漁、文教和社福之發展貢獻厥偉。在致詞時，他強調該州對全澳之重要性。南澳之葡萄佳釀、海鮮農產、礦物蘊藏、觀光資源不僅供應國內需要，並且外銷海外，賺取外匯無數。他認為，南澳首府阿得雷德規劃完善、綠地遍佈，擁有許多傲人資源。該市氣候宜人、建築典雅、交通便利、市容整齊、文風濃厚、物產豐富、治安良好、學府林立，最適海外學生前去就學。邇來，南澳政府努力向外推銷阿得雷德良質之各級教育，希望吸引更多海外學生前去留（遊）學。此次中澳高教會議在該市舉行，南澳三所大學首度破例攜手合作共同籌辦，意義非凡。他預祝大會圓滿成功。

第一場主題演講係由澳洲聯邦教育部常務次長 Dr Peter Shergold 和我教育部呂次長木琳主講兩國之高教現況及進行之各項改革。

中場休息後，由台大陳校長維昭及西澳大學校長 Professor Deryck Shreuder 分別就兩國大學行政管理之新發展發表主題演講。兩位主講者分兼澳洲大學校長委員會主席及我國立大學校院協會理事長之職，因此對大學行政管理均有親身體驗，對歷來沿革及當前難題之觀察相當敏銳。兩位皆提出他們寶貴之看法與建議。

午後，我行政院國科會前任副主委、現任中研院物理所所長吳茂昆教授以「如何增進台澳研究合作之芻議」（“A Proposal to Enhance Research Collaboration between Taiwan and Australia”）為題，發表主題演講。他先簡介當前台灣重點研究領域，以及研究經費來源及運作體

² 楊代表講詞如附件。

系；繼而提供對推動中澳雙方研究合作計畫之看法。澳方主講者 Professor Doug McEachern 現任「澳洲研究委員會」(Australian Research Council, ARC) 社會學、行為科學及經濟學處處長。他以「如何推動澳洲與台灣的研究合作：一種澳洲的觀點」(“How to Boost Research Collaboration between Australia and Taiwan: An Australian Perspective”)為題，談論如何推動澳台研究合作。演講中他特別就「澳洲研究委員會」功能做一介紹，並扼要分析當前澳洲各大學在整合研究時所面臨之問題。

主題演講後之分組討論在三間不同會議廳展開，子題分別是「研究成果商品化」、「大學教育國際化」和「大學之立法架構」。

在「研究成果商品化」分組討論中，淡江大學張校長紘炬以「台灣各大學研究成果之商品化」(“Commercilization of University Research Achievements in Taiwan”)為題作為引言。澳方由 UniQuest Pt 公司執行董事 Mr David Henderson 主講「科技商品化之策略」(“Technology Commercialisation Strategies”)。此公司係昆士蘭大學設立，近年來正努力將昆大研究成果轉化為高附加價值之智慧產權或市場產品。

在「教育國際化」分組討論中，我方主講人是屏東科技大學劉顯達校長，其論文係與該校技術合作處處長源光合撰，題目為「國際化 ~ 台灣技職校院的一項崇高政策」(“Internationalization ~ A Supreme Policy of the Technological and Vocational Educational Institutions in Taiwan”)。澳方引言人是新英格蘭大學(University of New England)校長 Professor Ingrid Moses。她曾接受我教育部邀請赴台參訪，並代表該校與我多所大學簽訂合作協定。目前兼任「澳洲大學品質機構」(The Australian University Quality Agency)董事、「國際大學校長協會」(International Association of University Presidents)新任會長、及「南太平洋地區大學理事會」(the Council of the University of South Pacific)理事等職。Moses 教授原籍德國，大學畢業後來澳攻讀社會學，專研大學行政與管理，曾在澳洲多所大學擔任教職及行政主管。

在「行政與管理」分組討論中，雙方代表對兩國高教學府之立法架構深感興趣。我方主講人黃碧端教授現任國立台南藝術學院校長。由於曾任教育部高教司司長，因此對我國大學相關法令及組織架構十分熟稔。澳方則由曾任澳洲大學校長委員會主席之 Professor Robert Smith 主講。Smith 教授現任南十字星大學董事會副主席。在以「澳洲大學行政與管理的立法架構」(“The Legislative Framework for Administration and Governance in Australian Universities”)為講題之論文中，他詳述澳洲大學行政及管理之立法架構。

晚間，澳方主辦單位設宴於澳洲國家葡萄酒中心宴會廳，並為我所有出席代表攝影留念。李院長遠哲在宴會中以「中央研究所追求卓越之道」(“The Pursuit of Excellence in Academia Sinica”)為題發表專題演講。在演講中他語重心長地表示：當今科學家應思考如何將世上武力競爭轉化為學術合作，以更進一步增加全人類福祉。他認為，與世界各國進行良性競爭，將是推動中央研究院進步之最大原動力。李院長精彩之演講贏得在場聽眾滿堂喝采。

四月九日 (週二)

本日上午，在澳外貿部禮賓官 Mr Brent Stewart 陪同下，李院長遠哲以澳國政府特邀貴賓身分前往坎培拉，展開正式拜會。在坎京期間，他曾與澳國政府總理首席科學顧問 Professor Robin Batterham，澳洲研究委員會執行長 Professor Vicki Sara，澳洲國家大學校長 Professor Ian Chubb 等重要學界人士會面。

上午，大會先安排南澳大學校長 Professor Denise Bradley 及我成功大學校長高強教授分別就大學教育品質保證之議題，發表主題演講。Bradley 教授主講題目是「澳洲大學品質監控的議題」(“Issues in Quality Assurance in Universities—Australia”)。高校長講題是「台灣私立大學發展的評估」(“Assessing the Development of Private Universities in Taiwan”)。

茶敘後，進行分組討論。在研究方面，澳方由阿得雷德大學副校長 Professor Edwina Cornish 以「澳洲生物科技發展的情形」(“Biotechnology: The Australian Situation”)為題，敘述澳洲生物科技研究之最新發展。我方則由台大醫院副院長許世明主講，題目是「台灣知識經濟時代的醫學教育與研究」(“The Medical Education and Research in Period of Knowledge-Based Economy in Taiwan”)。

在教學方面，有關「線上學習」之子題，由南澳大學副教授 Associate Professor Bruce King 報告「線上學習及大學機制之變化」(“Online Learning and Institutional Change”)。我僑光技術學院楊濬中校長則以「線上學習：機會與挑戰」(“Online Learning: Opportunities and Challenges”)為題提出有關台灣「網路學習」現況之報告。

在行政與監理方面，有關品質保證與監控，澳方由今年甫成立之「澳洲大學品質機構」執行長 Dr David Woodhouse 主講。我方則由前雲林科技大學校長、現任中國技術學院講座教授張文雄就我技職體系高等學校之品質保證相關議題提出報告，題目是“The Higher Technological Education in Taiwan, R.O.C.: Quality Management and Its Coping Strategy”。

午餐後，由南十字星大學校長 Professor John Rickard 及我華梵大學校長馬遜主講；前者題目為“*How to Promote Exchange between Australia and Taiwan*”，後者則為“*How to Promote Academic Exchange and Cooperation between Australia and Taiwan*”，他們各自提出對如何推動中澳學術交流與合作之卓見。

緊接另一回合之分組討論與資訊科技研究有關。我方由交通大學張俊彥校長主講，其論文題目是「資訊與通訊科技」(“*Information and Communication Technologies*)”。澳方則由福林德斯大學副校長 Professor Chris Marlin 教授以「澳洲大學的資訊與通訊科技研究」(“*Information and Communications Technology Research in Australian Universities*”)為題，敘述澳洲資訊與通訊科技發展之現況及難題。

有關「終身學習」之子題，我方代表國立嘉義大學校長楊國賜及澳方代表墨爾本皇家科技大學校長 Professor Ruth Dunkin 分別就台灣及澳洲實施終身學習之政策以及大學應扮演之角色提出報告。楊校長論文題目是「中華民國推動高等教育終身學習的策略」(“*Promoting Strategies of Lifelong Learning in Higher Education in the Republic of China on Taiwan*)”。

有關公私立大學之行政與監理以及各大學與教育主管單位之關係，新南威爾斯大學校長 Professor John Niland 和我東吳大學劉校長源俊均提出個人之觀察及看法。比較兩人提出之報告，可以發現不少值得省思之處。

下午四時，開始進行精彩的總結報告。三個分組討論之議題均由中澳雙方各派代表做總結。研究方面，由我中央大學校長劉兆漢及新英格蘭大學副校長 Professor Brian Stoddart 擔任總結報告人。教學方面總結報告則由昆士蘭大學副校長 Professor Trevor Grigg 及我元智大學校長詹世弘分別擔綱。針對行政與管理之子題，澳國南十字星大學董事會副主席 Professor Robert King 及李處長振清兩人負責總結。李處長以 PowerPoint 精心製作報告大綱及重點。展開序幕的是澳洲著名景觀 Uluru (聞名於世之石山，被原住民視為聖山) 之照片，在場澳洲人士看到之後，莫不嘖嘖稱許，佳評不斷。

大會閉幕式是由南澳福林德斯大學校長 Professor Anne Edwards 主持，雪梨大學校長 Professor Gavin Brown 特地從雪梨趕來致詞。之後，我代表團團長陳校長維昭正式宣佈下屆中澳高等教育會議將於兩年後在台召開，歡迎澳洲代表屆時踴躍參加。

在駐澳文化組陳組長安排下，呂次長、李處長、張代司長和周專門委員在會後接受澳洲重要媒體《校園評論》(*Campus Review*)

副主編 Mr David Myton之專訪。³ Myton先生對我教育改革之願景極感興趣，會後曾致函陳組長，盛讚我方代表在會中優異之表現。

為答謝澳方籌委會對我代表團之大力協助，我方由陳校長出面宴請澳方多位重要與會代表及執事人員，其中包括阿得雷德市黃市長國鑫，雪梨大學校長 Professor Gavin Brown，維多利亞科技大學校長，南澳大學副校長 Professor Ian Davey，新英格蘭大學校長 Professor Ingrid Moses，新南威爾斯大學校長 Professor John Niland，昆士蘭大學副校長 Professor Trevor Grigg，阿得雷德大學副校長 Professor Ian Young，福林德斯大學副校長 Professor Dean Forbes，新英格蘭大學副校長 Professor Brian Stoddart，澳洲教育部官員 Mr Robert Stevens、Mr Robert Noakes、Mr Oliver Simmonson 和 Ms Peta Arbuckle，福林德斯大學國際室主任 Ms Joanne Barker，南澳大學國際室主任 Mr Kevin Brett 及同仁 Ms Karen English 和 Mr Matt Taverner，以及澳洲大學校長委員會國際組經理 Mr Laurie Fisher。席間氣氛和諧融洽。眾人一面用餐，一面交談。在杯觥交錯之間，賓主盡展歡顏，無形中為兩國未來高教研究交流與合作奠定堅實之基礎。

四月十日（週三）

我方代表團部份團員因另有急事，今晨先行離去，其中包括張校長俊彥夫婦，李寧遠校長，國科會處長楊啟航，中研院物理所吳所長茂昆及陽明大學翟研發長建富等。

為落實本次會議結論之推動與執行，並加速推動雙方學術交流，澳洲大學校長委員會對台工作小組特於本日上午假南澳大學校長會議室與我方代表進行雙邊工作小組會議。我方出席者計有台大陳校長維昭、中央大學劉校長兆漢和東吳大學劉校長源俊，駐處文化組陳秘書亦列席參加。

我方其餘代表則分兩組，參訪南澳大學 Mawson Lake 校區及福林德斯大學。教育部周專門委員和房科員和其他多位我方代表參加第一組，參訪南澳大學重要研究中心之儀器設備，並聽取簡報。

南澳大學 1991 年才由數所學院合併而成，共有六個校區，分散市區或市郊，學生人數為 24,738 人，包括大學部 20,100 人、研究生約 4,638 人，其中外國籍學生 4,377 人。除有各種不同系所之外，該校尚有多個頗具特色之研究中心及學程，例如電子區域網路研究。南澳大學重視國際學術交流合作，與 27 個國家 75 所大學連結成學術網，提供學生各種不同學習機會。此外，該校為維護及提高教育行政

³ 該專訪刊載於本年四月十七～廿三日出版之 *Campus Review*，詳如附件。

品質，業已獲得 ISO9001 認可檢核通過。

第二組人員包括呂次長木琳、李處長振清、張代司長國保、駐澳文化組陳組長東榮及台大學術交流中心邱主任錦榮、張助理純怡。澳國教育部官員 Mr Oliver Simmonson 專程奉陪。車抵福林德斯大學校園時，該校副校長 Professor Dean Forbes 及國際室同仁已在校門恭候。為歡迎貴賓到臨，該校主動升起我中華民國國旗，令人感動。該校台灣留學生見到我國國旗與澳國國旗及該校校旗在藍空中飄揚，無不喜出望外。

福林德斯校長 Professor Anne Edwards 是著名社會學家，她親自為我訪團做簡報。之後，我訪團分兩組參觀。台大邱主任等人參觀該校劇場及設備，並詢問有關戲劇及其他人文課程設計與安排情形。呂次長等人則在工學院院長 Professor John Wheldrake 陪同下，參觀與生物科技相關之實驗室，並與研究人員交談。

福林德斯大學成立於 1966 年，目前共有 13,200 學生：大學部 10,800 人，研究生 2,400 人，其中包括來自 70 個不同國家之外籍學生 1,400 人。為推動國際交流及招募外籍學生，該校設有國際服務處，既有八位專責同仁。該校學術單位分設科學工程、健康科學、社會科學、人文學（教育、一般人文學科、法律和神學）等四個學院

(Faculties)。該校整體之研究表現相當卓越。全校約有 1,600 名教職員，其中 800 人係屬研究與教學之學術人員，學術人員中有 32% 專職研究，其比例在澳洲 39 所大學中名列第六。全校藏書 160 萬冊，共有一千部個人電腦供學生使用。此外，該校設有學生學習中心，負責輔導學生英語學習，頗具特色。

參觀上述兩校之後，我方代表在阿得雷德大學會合，聽取該校副校長 Professor Edwina Cornish 及 Professor Ian King 之簡報。之後，接受該校午宴招待，並參觀總團書館。為配合本次會議在南澳舉行，我駐處新聞組透過文化組引介，與該校合辦「台灣風情畫」攝影展，地點在圖書館大廳，展出效果良好，頗受好評。

阿得雷德大學創校於 1874 年，頗具歷史和學術聲望，歷來傑出校友輩出。該校共有四個校區，設有資訊工程及數學學院、衛生科學學院、人文與社會科學學院、專業教育學院（含法律、商業、管理、教育、建築、老人照護等）、及自然科學學院等學術單位。全校學生 14,000 人，外籍學生 2,000 人，佔七分之一。全校教職員共有 2,250 人，包括一般職員 1,095 人、負責教學及研究之教員 720 人、及專任研究員 435 人。該校曾有兩位諾貝爾獎得主，2001 年計有 26 位獲得全澳及國際傑出學術獎。該校設有 15 個合作研究中心、3 個國家研究中心、24 個全校性之研究中心及 12 個各學院設立之中心，研究成果頗為卓著。優先研究重點在於農業科學、環境科學、衛生及生物醫

學、化學、地球科學、工程、電腦資訊、數學及理論物理學、自然及太空科學、人文社會學等領域。該校雖屬公立大學，學雜費收費標準每年約在 27,000（醫學）至 12,000（社會科學）澳元之間。

晚間，呂次長與教育部同仁在市區京川樓餐廳舉行工作會報。
四月十一日（週四）

我代表團有五位團員（劉兆漢、劉源俊和林聰明三位校長、張文雄教授和許和鈞院長）預定本日清晨趕往布理斯本，轉搭長榮班機返國。由於時間異常緊迫，陳組長特地拜託布市鄉親前往機場協助，渠等終能及時搭上飛機，順利回台。至於其他團員，大多數從阿得雷德搭機前往雪梨，再從該市轉機返台。

我教育部代表團抵達雪梨時，幸蒙駐雪梨辦事處沈組長志嚴接機，並陪同至下榻旅館。午後，呂次長、張代司長和房科員在陳組長陪同下，或徒步，或搭渡輪，參觀雪梨港附近之特殊景點（包括岩石區、雪梨大橋及雪梨歌劇院等）。呂次長等人對雪梨市政規劃及各項軟硬設備印象十分深刻。

晚間，呂次長等人接受駐雪梨辦事處賴處長建中邀宴，該處沈組長和范秘書惠君及駐澳文化組陳組長亦在旁作陪。

四月十二日（週五）

本日清晨，呂次長和楊代表到李院長遠哲下榻旅館會合，齊往澳洲聯邦教育、科學及訓練部在雪梨之辦公室，拜訪該部部長 Dr Brendan Nelson。Nelson 部長主管澳洲全國教育、訓練和科研等大政，與李院長和呂次長有諸多共同話題。雙方在上午八時三十分正式會面，晤談甚歡，並盼兩國在教育及科研能有更多互惠互利之交流與合作。

上午十時四十五分，呂次長率李處長及陳組長參訪新南威爾斯大學(University of New South Wales)，與該校掌管研究及國際事務之副校長 Professor Mark Wainwright 等人會晤，並出席由 Wainwright 副校長主持之圓桌座談：「國際研究合作未來之導向」(“Future Directions in International Research Collaboration”)。除副校長 Wainwright 外，該校尚有電機學院院長 Professor Brendan Parker、理學院教授 Professor David Black、量子電腦科技研究中心 (Centre for Quantum Computer Technology) 主任 Mr Robert Clark 及新南威爾斯大學國際中心主任 Ms Jennie Lang 等。我方以李院長和呂次長為首，國際文教處李處長、駐雪梨處賴處長及文化組陳組長亦在場。負責為我訪團簡報的是 Lang 主任。

李院長對中研院與新南威爾斯大學交流與合作甚感興趣。他在座談會中特別提到中研院新設之國際學生院每年將提供優渥獎學金，用以鼓勵優秀學生就讀該院，與該院一流學者共同學習和研究。

午餐後，呂次長一行前往該校禮堂 Sir John Clancy Auditorium，列席參加該校畢業典禮。由於李院長將接受該校頒贈之榮譽科學博士學位，現場早有中外記者等候。畢業典禮係由該校華裔董事會主席 (Chancellor) 余森美醫師 (Dr John Yu AC) 主持，應屆畢業生一一上台接受學位證書。頒贈李院長榮譽學位之前，校長 Professor John Niland 特別讚許李院長在學術及其他方面之傑出成就，並認為李院長接受榮譽學位之後，勢必會為該校帶來更高榮譽。獲頒榮譽學位之後，李院長特別針對在場師生和家長發表一篇內容精湛，令人深省之演說。

晚間駐澳楊代表宴請李院長遠哲和呂次長，澳方陪賓包括：澳台經貿協會 (Australia-Taiwan Business Council) 主席 The Right Honorable Ian Sinclair，該會理事長 Mr Ross Maddock，澳中理事會 (Australia China Council) 副主席 Ms Dinah Dysart，雪梨研究院 (the Sydney Institute，澳洲智庫) 執行董事 Mr Gerard Henderson，行銷顧問公司執行董事長 Mr John Kean，Selmed 公司執行董事 Mr Albert Sorrell，及澳外貿部台灣科科員 Mr Brent Stewart。教育部李處長及駐澳文化組陳組長亦在旁作陪。

四月十三日 (週六)

今日上午，我教育部代表團在陳組長陪同下前往雪梨國際機場。上午十一時三十分順利搭乘華航班機返台，結束一趟收穫豐碩的澳洲之旅。

中澳高等教育會議引發的迴響與未來願景

中澳雙方正式接觸之後，讓我們感受到國內大學的國際交流不足，出國經費欠充沛、多數學校迄今尚無設立國際交流單位或人員之機制、英語教學環境不良，致招收國際學生相當不利，大學自主機制不足也難以建立發展優勢，大學評鑑制度又尚在起步等缺失。為改善上述缺失，各大學應儘量提供教職員出國交流機會、放寬大學出國經費之編列或運用、鼓勵各校設立國際學術交流單位或人員、招收國際學生之必要性、建立良好的英語學習環境、授權大學自主權責、建立大學評鑑機構之必要性等七項建議，茲說明如下：

（一）多提供大學人員出國交流機會

常言道，「百聞不如一見」；又，「他山之石，可以攻錯」。大學的辦學成效必須經得起國外大學的競爭、比較與挑戰。國外的良法美制有值得借鑑者亦可加以卓參，以發揮去劣揚善之效。為提升大學校長、教師及相關行政人員之國際視野，未來對於國立大學出國案件之審核應儘可能優先支持與鼓勵。各校也應訂定相關激勵措施，鼓勵人員出國交流。

（二）放寬大學出國經費之編列或運用

私立大學之出國由各校自主，國立大學則在經費編列受限制。近年來大學自籌校務基金之比例逐年提高，各校為提昇國際學術交流與合作之成效，應設法編列經費可用以補助師生出國，藉此拓展國際能見度與學術之品質。配合校務基金條例之修正，應可放寬大學以自籌經費或建教合作、推廣教育、場地收入及利息等收入之結餘列為出國經費來源，使各校得有自主建立出國審核之機制，以加速大學國際交流之推動。

（三）鼓勵各校設立國際學術交流單位或人員

我國大學法對於各校是否設立國際學術交流單位或人員並未明定，因此許多學校幾乎不重視此單位或人員之設立。相較於歐美及鄰近的日本、韓國、新加坡、香港等，我國的高等學府似乎欠缺此種必須設法建置之國際學術行政單位。少部分已設立國際學術交流單位者，也因專職人員編制不足、學養待加強，而無法發揮良好運作成效。欲鼓勵各大學走向國際，基本的承辦單位及具國際宏觀的主事人員，殊有必要。

（四）招收國際學生之必要性

澳洲及歐美各國之大學均相當重視國際學生之招募，對於國際學生之教學、輔導也都訂有相關規範，因此國際學生之規模相當可觀，而且來自世界各國，對於國際化的建立已經奠定良好基礎。近幾年我國留澳學生已增加到六千多人；雖然如此，澳洲政府及各大學仍積極希望爭取更多我國學生赴澳留學。反觀國內大學，不但國際學生人數欠缺，外籍生所代表的國家數也宜繼續加強。除駐外人員可多加協助聯繫外，各大學應主動提昇學術品質與國際學術地位。事實上我

們列為優先爭取的東南亞各國赴澳洲留學之比例甚高，如何提高誘因，值得政府與大學繼續努力。

(五) 建立良好的英語學習環境

澳洲以英語為國家語言，但其對國外學生的英語學習仍極重視，如福林德斯大學設立學生學習中心負責加強學生的英語教學與學習。我國既非英語系國家，欲以中國文化來吸引國際學生之優勢幾不存在，鼓勵各校建立良好的英語學習環境，加強英語刊物及相關資訊的交流，將英語課程列為校內必修，訂定英語畢業門檻成績，鼓勵教師使用英語授課，舉辦教師及學生英語夏令營等，都是提升大學國際競爭不可或缺的重要方向。

(六) 大學自主、建立特色

澳洲三十九所大學中僅二所私立大學，其餘均為公立大學。澳洲聯邦政府除依據大學表現核給相關資源外，儘可能放手大學自主。因此各校在教學、研究與行政管理方面可自主建立學校特色，發揮資源使用效益，建立清楚的權責關係。我國大談大學自主多年，對公立大學的員額與經費若仍無法放手大學自主，不但將繼續增加政府負擔外，也將阻礙大學自主發展空間。各大學所應擔負之多元責任，必須貫徹到底。

(七) 建立大學評鑑機構之必要性

澳洲政府為提高大學辦學水準，特成立「澳洲大學品質機構」(Australian Universities Quality Agency, AUQA)，以五年為一循環，負責評鑑大學的教學、研究和行政。其主要職責包括指導大學自我評鑑、出版評鑑報告、建立評鑑指標、評鑑結果提供州或地方認可。我國在評鑑制度方面方興未艾，如能倣效澳洲成立專責法人機構，專司大學評鑑之責，不但可提高評鑑效率，更可避免教育部被批評為球員兼裁判，對大學發展當有正面效益。

The Inspiration and Vision of the First Australia Taiwan Higher Education Conference

By Chen-Ching Li, Tung-Jung Chen, Kuo-Pao Chang, and Ming-Hua Tsou

A Distinctive International Academic Conference

Australia and Taiwan have sought and promoted a substantive relationship in recent years on the principle of mutual benefit. There have been numerous successes, in particular in academic, cultural, educational, and technological fields and trade relations. On the basis of these experiences, academics, businessmen and government officials of both countries now look to further cooperation in the future. The successful organization of the First Australia Taiwan Conference on Higher Education is among the best examples of such cooperation.

Jointly organized by the Australian Commonwealth Department of Education, Science and Training, the Australian Vice Chancellors' Committee and three South Australia universities, the First Australia Taiwan Conference on Higher Education opened with a reception on the afternoon of 7th April 2002. This reception to welcome all the participating delegates was hosted by His Excellency Alfred Huang, Lord Mayor of Adelaide in the Municipal Hall. Mr. Timothy Chin-Tien Yang, Representative of the Taipei Economic and Cultural Office Australia delivered an address on behalf of the Taiwan delegation. The conference proceedings were scheduled for April 8th and 9th. On April 10th, Taiwan delegates were invited by the organizers to visit the University of South Australia, Adelaide University, and Flinders University, each situated in Adelaide. The conference was officially concluded after this visit.

Although the official conference lasted only two days, it was the fruit of two years of preparation, visits and discussion between the Vice Chancellors and Presidents and other staff involved on both sides. The dedication, commitment, and enthusiasm of those involved in this project were exemplary. Praise should also be given for other successes: these include the strengthening of bilateral relations; increased recognition and understanding of either side's higher education systems; the valuable international conference experience gained by the Taiwan university Presidents attending; valuable exchanges in the areas of school operation and leadership; firsthand

observation of Australian campus planning and operational management; fruitful discussion of higher education quality and means to improve it; and the laying of foundations for further Taiwan higher education international exchange. The theme of the conference “Quality Assurance and the Pursuit of Excellence” was thoughtfully chosen and had great contemporary significance.

Enhancing Taiwan-Australia Academic Exchange and Friendship

The Taiwanese delegates were invited to participate in the bi-lateral conference in South Australia at the initiative of the Australian government. Those invited included 17 university presidents, 20 academic specialists and government officials, including Education Vice Minister Mr. Mu-Lin Lu; Acting Director of the Higher Education Department, Mr. Kuo-Pao Chang; Technological and Vocational Education Department Specialist Mr. Ming-Hwa Jou; Mr. Chen-Ching Li, Director General of the Bureau of International Cultural and Education Relations; Miss Yu-Ching Fang, Secretary; Mr. Timothy Chin-Tien Yang, Representative of the Taipei Economic and Cultural Office Australia; Director Tung-Jung Chen of the Cultural Division; Miss Rose Kuo-Chen Chen, First Secretary; and Mr. Ying-Bin Liang, Director of the Taipei Economic and Cultural Office Melbourne. As a distinguished guest invited by Australia, Dr. Yuan-Tseh Lee, President of Academia Sinica also delivered a keynote speech at the conference.

The Department of Education, Science and Training, Australia demonstrated its support with a 60,000 AUD subsidy for the conference. Furthermore, the department assigned nine people to assist and accompany the delegation throughout the conference. Dr. Peter Shergold, Secretary of the Department of Education, Science and Training, Australia also attended in person, delivering an opening keynote address and demonstrating the value that the Australian government placed on the conference. The most impressive moment was that during the visit to the Flinders University, which was led by the Deputy Minister, the National Flag of Taiwan was hoisted at the main gate to express a warm welcome.

Mr. Timothy Chin-Tien Yang, Representative of the Taipei Economic and Cultural Office Australia, Mr. Tung-Jung Chen, Director of the Cultural Division, and Miss Rose Kuo-Chen Chen, First Secretary, who devoted much time to pre-meeting coordination, also participated throughout the conference. The

warmth and effectiveness of communication between the two sides established an excellent foundation for reinforcing higher education friendship between Taiwan and Australia. In addition, the arrival of several university Presidents sparked great excitement among Taiwan nationals and students in South Australia and the visitors were warmly received. Overall, the delegation and the government representatives in Australia acquitted themselves very well before, during and after the conference. It can be regarded as an extremely successful academic/diplomatic action.

During the two-day conference, the two sides served alternately as the chairpersons for the official opening and closing session, and the various focus sessions; both sides also served as moderators, introducing the speakers. A particularly impressive arrangement was the measures taken to integrate all of the participants in discussion. Each focus session looked separately at three aspects of the topic, under the headings Research, Teaching and Learning, and Administration and Governance, and one chairperson and two moderators were assigned to each of these subgroups. Adding in the chairpersons and moderators for the summary reports for each topic, every President and Vice Chancellor attending from both Taiwan and Australia were offered an opportunity either to be a chairperson or a moderator. With this set-up, the Presidents and Vice Chancellors were able to present a detailed introduction to their own higher education organization, discuss and exchange experiences, and increase mutual understanding.

Some of Taiwan's university Presidents have experience at attending international conferences overseas, whether individually or in small groups. This was likely the first time, however, that a 30-strong group of university presidents had travelled together. Many noted that this in itself presented a valuable opportunity. Those who were invited to act as moderators and chairpersons during the conference needed to prepare in advance relevant information on Taiwan's higher education, supplemented with transparencies and PowerPoint slides in English. Their dedication not only enhanced the quality of the conference and received praise from the Australian side, and it also provided practical experience for those Presidents who may attend other international conferences in the future.

Careful planning by the organisers ensured that there were several opportunities during the conference for mutual exchange and social interaction. Events included the opening reception on 7th April, the Official Conference Dinner hosted by the Australian side on 8th April, and an

Appreciation Banquet hosted by the Taiwan university Presidents. These functions gave delegates great opportunities to get to know one another. In this environment, friendships were enhanced as a matter of course, while, at the same time, experiences and knowledge were shared. Morning teas, afternoon coffee breaks, and buffet luncheons were also scheduled for the two-day conference so that groups of participants could meet, both inside and outside the venue, to continue their dialogue on education concepts, operational experiences and leadership. These meetings and conversations were unexpected gains of the conference.

An observation on the operational management of Australian universities

Australia is 200 times larger than Taiwan. The conference was held in Adelaide, the State capital of South Australia. Adelaide has three universities, each with its own campus. The Taiwanese delegates were invited by the organisers to visit these three universities on 10th April to tour their main campuses or areas of special interest. The following is a brief description of each university:

- (1) University of South Australia: Formed from the amalgamation of several colleges in 1991, the university has six campuses scattered throughout the metropolitan and suburban areas. It is the largest university in South Australia with approximately 25,000 students – 20,100 undergraduates, 4,638 postgraduates, and 4,377 overseas students. Other than the various departments and institutes, the University of South Australia also has two special research centres, namely the Institute for Telecommunications Research and the Ian Wark Research Institute. With emphasis on international academic exchange, the university has an academic network connecting 75 universities in 27 countries, offering students diverse learning opportunities. With its attention on teaching quality, the university has been awarded ISO9001 certification.
- (2) Flinders University: Founded in 1966, the university has a total of 13,200 students. There are 10,800 undergraduates, 2,400 postgraduates, and 1,400 overseas students from 70 countries. In order to promote international exchange and to recruit foreign students, the university has an International Office with eight full-time officers. There are four faculties: Science & Engineering, Health Sciences, Social Sciences, and Humanities

(Education, General Humanities, Law and Theology). The university's research performance is quite remarkable. Among the 1,600 faculty staff of Flinders University, 800 are Academic Staff engaged in research and teaching. Of the Academic Staff, 30% are research-only personnel, a proportion that ranks the university sixth among the 39 universities in Australia. The university library has a collection of 1.6 million books and more than 1,000 computers. The university also has a Student Learning Centre that is responsible for English teaching programmes.

- (3) Adelaide University: Founded in 1874, this is a university laden with historical and academic prestige. The university has four campuses and faculties of Information Engineering and Mathematics, Health Sciences, Humanities and Social Sciences, the Professions (including Law, Commerce, Management, Architecture and Senior Citizen Nursing), and the Sciences. Of the 14,000 students in the school, 2,000 are overseas students from 70 countries. They count for one seventh of the total number of students. There are 2,250 faculty staff, including 1,095 staff members, 720 teaching and research staff, and 435 research-only staff. Adelaide University has been home to a succession of talented individuals, including two Nobel Laureates. In 2001, 26 members of the university faculty received national and international academic awards. Backing up its excellent research achievements, the university is equipped with 15 joint research centres, 3 national research centres, 24 university research centres, and 12 other centres established by the various faculties and institutions. Research priorities are focused on Agricultural Sciences, Environmental Sciences, Health and Biomedicine, Chemistry, Geo-Science, Engineering, Computer Information, Mathematics and Theoretical Physics, Natural and Space Science, and Socio-Humanity studies. Although it is a public university, the standard tuition fees and miscellaneous charges of the university are from 12,000 AUD (Social Sciences) to 27,000 AUD (Medicine) per year. Comparatively speaking, the tuition and miscellaneous charges of both public and private universities in Taiwan are at the lower end of the scale.

Exploring Higher Education Issues and Solutions

The theme of the conference was Quality Assurance and the Pursuit of Excellence. This theme was then approached from the angles of Research, Teaching and Learning, and Administration and Governance for concurrent discussion. Three sub-topics were discussed for each of these topics. The sub-topics looked at under the Research heading were Commercialisation, Biotechnology, and Information and Communications. The Teaching and Learning group addressed Internationalisation, Online Learning, and Lifelong Learning. The third topic, Administration and Governance, was discussed in terms of Legislative Framework, Quality Assurance, and Public and Private. Each of the sub-topics highlighted a critical and contemporary issue in higher education. This provided a framework for involved discussion between the Presidents, Vice Chancellors, and participants on the enhancement of quality tertiary education and facilitated exchanges of ideas on pursuing outstanding performance. The summary report included comparative presentations of higher education in Taiwan and Australia, and analysis and summaries of concrete recommendations for further action by both sides. It was a fruitful result for both sides.

Echoes and Visions Triggered by the Conference

While preparations were underway for this conference, Taiwan and Australia agreed that in 2004 Taiwan would invite Australian representatives to participate in the Second Australia Taiwan Higher Education Conference in Taiwan. In order to expedite mutual exchange and to consolidate the promotion and execution of the conclusions of the conference, and to discuss the direction for the second conference, a working group meeting was held at the conference room of the University of South Australia on the morning of 10th April by the representatives of the Taiwan National University Association (President Chao-Han Liu and President Wei-Jao Chen), President Yuan-Tsun Liu of the Private University Promotion Association, and the representatives of the Australian Vice Chancellors' Committee. In addition, the friendships established between delegates at the meeting have resulted in several invitations being made for further visits. Other participants moved closer toward possible cooperation in, for instance, teacher and student exchanges, and sister university ties. After Taiwan's recent accession to the WTO, all these moves help establish appropriate foundations for Taiwan's international higher education exchanges and are a further step in the internationalisation of universities.

When Taiwan established education contacts with Australia, it was realized that Taiwan's universities participate in too few international exchanges. Other deficiencies include limited budgets for overseas trips and the fact that many universities have no mechanism or staff dedicated to international exchanges. A poor English learning environment makes recruiting overseas students harder. Universities lack sufficient autonomy to develop individual advantages and the university review system is underdeveloped. In order to improve the above-mentioned deficiencies, seven recommendations were made: Universities should give faculty staff opportunities to take part in international exchanges. Budgeting of travel expenses should be relaxed. All universities should be encouraged to set up international academic exchange divisions or assign dedicated staff. The possibility of recruiting international students should be investigated. A good English learning environment should be established. Universities should be granted more autonomy. A university review board should be established.

A full description of these seven recommendations follows:

1. Provide more opportunities for overseas exchange

As the proverbs say, "To see something once is better than hearing about it a hundred times", and "The stone of other hills may serve to polish the jade of home". The way a university is run must stand up to competition, comparison and challenge from foreign universities. Any successful system or best practice from abroad can be adopted or used as a reference to help improve on failings while maintaining successes. Approval of overseas visits should be supported and encouraged as a priority for broadening the international vision of university presidents, teachers and relevant administrative personnel. Universities should each formulate measures to encourage their own staff to undertake overseas exchanges.

2. Relax the budgeting and utilization of travel expenses

Overseas visits are decided autonomously by private universities, whilst the budgets of national universities are limited by restriction. In recent years, the proportion of self-raised operational funds in universities has steadily increased. In order to increase international academic exchange and cooperation, and boost international visibility and academic quality, ample budgets should be allocated to subsidising travel costs for teachers and students. Amendments to school funding regulations could allow some self-raised funds and those from industrial cooperation, as well as additional

income from further education, venue rental, and interest income etc. to be channelled toward funding overseas visits. This would enable universities to establish their own autonomous mechanisms for approval of overseas visits and expedite the promotion of international exchange.

3. Encourage the establishment of international academic exchange organizations

The laws governing universities in Taiwan have never clearly defined whether individual institutions can set up international exchange divisions or employ dedicated staff. Accordingly, many institutions have not done so. Compared to counterparts in Europe and U.S., and neighbouring countries such as Japan, Korea, Singapore or Hong Kong, tertiary education institutes in Taiwan, needing to find a way to set them up, lack dedicated international academic administrative bodies. The few that do have such academic exchange divisions lack the dedicated personnel needed to develop them. The establishment of dedicated exchange departments with globally-focussed staff is a pre-requisite for the internationalisation of universities.

4. International students should be recruited

Universities in Australia, Europe and the U.S. place considerable emphasis on recruiting international students and have standards and criteria for the teaching and guidance for international students. Consequently, these universities host considerable numbers of foreign students from all over the world and have already built a strong foundation for internationalisation. Over the past few years, the number of Taiwanese students studying in Australia has increased to over 6,000. The Australian government and the various universities are devoted to attracting even more Taiwanese students to study in Australia. In Taiwan, however, not only are there very few foreign students in the universities, they also come from a limited number of countries. Overseas resident representatives could offer assistance and promotion in this regard. In addition, universities should also proactively upgrade their academic quality and international position. In fact, a relatively high proportion of students from those Southeast Asian countries that are the priority countries for recruiting international students for Taiwan now study in Australia. Both the government and the universities should continue to devote themselves to improving incentives for attracting foreign students.

5. Establish a favourable English learning environment

Although English is the national language of Australia, the country still puts a lot of emphasis on teaching English to foreign students. An example at Flinders University is that they have set up a student learning centre responsible for the strengthening of English teaching and learning. Taiwan is a non-English speaking country. The chance to study Chinese culture presents almost no comparable competitive advantage. Universities should promote a favourable English learning environment, enhance English-language periodicals and exchange of information, make English a compulsory subject, set an English score threshold on graduation, encourage teachers to teach their subjects in English, and organise English summer camps for teachers and students. These are all indispensable steps to raising the international competitiveness of universities.

6. Increase independent governance and individuality

Of the 39 universities in Australia, only two are private; the rest are all public universities. While relevant resources are allocated by the Federal Government in accordance with institution performance, all universities are totally independent in their own governance. Consequently, universities can build on their strengths and their distinguishing features in terms of teaching, research and administration, improve efficiency, and establish well-defined rights and obligations. These are lessons that Taiwan should learn from.

7. A university review board needs to be established

In order to raise university standards, the Australian government has set up the AUQA – Australian Universities Quality Agency. Working on a five-year cycle, the AUQA is responsible for reviewing the teaching, research and administration of a university. The main duties of the agency include guidance to universities in conducting self-assessment, publication of assessment reports, formulation of assessment indices, and presentation of assessment reports to State or local government for their approval. As a newcomer to review systems, Taiwan could establish a dedicated legal organization, modelled on that in Australia that would be solely responsible for university assessment. This would not only enhance assessment efficiency, it would also prevent the Ministry of Education from being criticized for acting as both football player and referee and it would bring significant benefits to university development.

Epilogue

President Yuan-Tseh Lee of Academia Sinica was invited to participate in the Australia Taiwan Higher Education Conference as a distinguished guest. He delivered an excellent and visionary keynote address titled *The Pursuit of Excellence in Academia Sinica*. The National Science Council of the Executive Yuan delegated Mr. Chi-Hang Yang, Director of International Cooperation to attend the conference. Participants from the Australian side consisted of Chancellors, Vice Chancellors and Professors from more than 20 universities including the University of Sydney, the University of New South Wales, Australian National University, the University Melbourne, Adelaide University, the University of Western Australia, the University of Queensland, and 48 directors of tertiary education and research institutes. There were also nine government officials in attendance at the conference led by His Excellency Dr. Peter Shergold, Secretary of the Department of Education, Science and Training, Australia.

The university Presidents from Taiwan attending the Australian conference were Mr. Wei-Jao Chen of National Taiwan University, Mr. Yuan-Tsun Liu of Soochow University, Mr. Shanda Liu of National Pingtung University of Science & Technology, Mr. Chung-Yen Chang of National Chiao Tung University, Mr. Chao-Han Liu of National Central University, Mr. Kuo-Shih Yang of National Chia Yi University, Mr. John Ning-Yuean Lee of Fu Jen Catholic University, Mr. Maw-Fa Chien of National Taiwan Normal University, Ms. Sun Ma of Huafan University, Mr. Jenq-jye Hwang of National Tainan Teachers College, Mr. Horng-Jinh Chang of Tamkang University, Mr. Chiang Kao of National Cheng Kung University, Mr. Chun-Chung Yang of the Overseas Chinese Institute of Technology, Miss Pi-Twan Huang of Tainan National College of the Arts, Mr. Tsong-Ming Lin of National Yunlin University of Science and Technology, and Mr. Shih-Hung Chan of Yuan Ze University. Other delegates from Taiwan attending the Australian conference were Mr. Maw-Kuen Wu, Director of the Institute of Physics, Academia Sinica; Mr. Her-Jiun Sheu, Director of the Faculty of Commerce, National Chi Nan University; Professor Vincent W.S. Chang of Chung Kuo Institute of Technology; Mr. Wen-Guey, Dean of the College of Life Science, National Tsing Hua University; Mr. Kin-Fu Chak, Dean of the Office of Research and Development, National Yang-Ming University; Dr. Su-Ming Hsu, Vice Superintendent of National Taiwan University Hospital; Mr. Kuang-Chao Fan,

Director of the Incubation Centre of National Taiwan University; Mr. I-Peng Lin, Director of the Computer and Information Centre, National Taiwan University; Mr. Chin-Jung Chiu, Director of the Centre for International Academic Exchange, National Taiwan University; Mr. Yao-Ming Tseng, Dean of the Faculty of Science and Engineering, Chao-Yang University of Technology; Miss Lily Hwei-Mei Chen, Director of the Centre for International Academic Exchange, Tamkang University; and Professor Cheng-Hsiang Pan of Kaohsiung University of Technology.

The Conference concluded with great success on the afternoon of the 9th April. Vice Minister Mu-Lin Lu, Acting Director Mr. Kuo-Pao Chang and Director General Chen-Ching Li had an exclusive interview with David Myton, Deputy Chief Editor of a major Australian newspaper, *Campus Review*. Mr. Myton was very interested in Taiwan's vision of education reform; he also praised highly the overall performance of the Taiwan delegation. The report of the exclusive interview was published on page 4 of the *Campus Review* dated 17th – 23rd April this year.

附錄：大會論文彙編

**AUSTRALIA TAIWAN CONFERENCE ON
HIGHER EDUCATION**

8-9 APRIL 2002

ADELAIDE AUSTRALIA

**(Funded and supported by
Australian Education International
and the Taiwanese Ministry of Education)**

**PRESENTATIONS BY AUSTRALIAN
SPEAKERS IN CHINESE**

中澳高等教育會議

二〇〇二年四月八、九日

澳洲阿得雷德市

**(澳洲聯邦教育、科學暨訓練部國際教育處及
中華民國教育部贊助及支持)**

澳洲主講者講詞中譯本



**Australian
Education
INTERNATIONAL**
An Australian Government Initiative

These presentations have been translated and reproduced with the kind permission of the individual authors. The views expressed in this publication may not necessarily be shared by the Commonwealth of Australia. The translated texts of this publication are the property of the Commonwealth of Australia. Apart from any use permitted by law, no part of the translated texts may be reproduced without the written permission of the Commonwealth of Australia acting through Australian Education International (AEI) of the Department of Education, Science and Training.

Further information about AEI is available at the following website:

<http://aei.dest.gov.au>

這些講詞均獲各主講者同意後翻譯而成。講詞中表達之意見並不一定代表澳洲聯邦政府之立場。翻譯版權屬澳洲聯邦政府所有。除法律許可外，非經澳洲聯邦政府（由澳洲聯邦教育、科學暨訓練部國際教育處主理）之書面同意，不得擅自複製講詞內容。

有關澳洲聯邦教育、科學暨訓練部國際教育處進一步資訊，請參考下列網站：

<http://aei.dest.gov.au>

大會論文彙編目錄

頁次

1. Higher Education in Australia (Dr Peter Shergold).....34
中譯本：澳洲高等教育 (Dr Peter Shergold)..... 42
2. Higher Education in the Republic of China on Taiwan (Mu-lin Lu, Ph.D.).....49
3. New Developments in University Governance (Professor Deryck Schreuder).....74
中譯本：大學管理的新發展 (Professor Deryck Schreuder).....88
4. New Development in University Governance (Wei-Jao Chen).....98
5. How to Boost Research Collaboration between Australia and Taiwan: An Australian Perspective (Professor Doug McEachern).....99
中譯本：社會、行為暨經濟科學研究處處長 (Professor Doug McEachern).....108
6. A Proposal to Enhance Research Collaboration Between Taiwan And Australia (Maw-kuen Wu)..... 115
7. Technology Commercialization Strategies (Mr. David Henderson).....116
中譯本：研究成果商品化 (Mr. David Henderson).....125
8. Commercialization of University Research Achievements in Taiwan (Horng-jinh Chang).....132
9. Australian Taiwan Conference on Higher (Professor Ingrid Moses).....133
中譯本：教學與學習-國際化 (Professor Ingrid Moses).....143
10. Internationalization—A Supreme Policy of The Technological And Vocational Educational Institutions In Taiwan (Shan-Da Liu and Yuan-Kuang Guu).....151
11. The Legislative Framework For Administration And Governance In Australian Universities (Robert H T Smith).....157
中譯本：行政與管理之法規架構 (Robert H T Smith).....158
12. Higher Education In Taiwan: Transformation And Reform (Pi -twan

Huang)	166
13. Issues in Quality Assurance in Universities (Professor Denise Bradley AO)	167
中譯本：大學品質保證的議	182
14. Assessing The Development of Private Universities In Taiwan (Chiang Kao)	187
15. Biotechnology: The Australian Situation (Edwina Cornish)	188
中譯本：研究-生物科技	196
16. The Medical Education And Research In Period of Knowledge-based Economy In Taiwan (Su-Ming Hsu, MD)	202
17. Online Learning And Institutional Change (Assoc. Prof.. Bruce King)	203
中譯本：教育與學習-線上學習 (Bruce King)	219
18. Online Learning: Opportunities And Challenges (Ted Chun-Chung Yan	226
19. Administration and Governance : Quality Assurance (Dr David Woodhouse)	227
中譯本：行政與管理-品質監控 (Dr David Woodhouse)	236
20. The Higher Technological Education in Taiwan, R.O.C. Quality Management And its coping Strategy (Wen-shion Chang)	243
21. How to Promote Exchange between Australia and Taiwan (Professor John Rickard)	244
中譯本：如何促進澳洲與台灣的學術交流與合作 (Professor John Rickard)	253
22. How to Promote Academic Exchange And Coopertion between Australia and Taiwan (Dr. Sun Ma)	260
23. Information And Communications Technology Research in Australian Universities (Chris Marlin)	264
中譯本：研究-資訊及通訊技術 (Chris Marlin)	274
24. Information And Communications Technology (Chung-Yen Chang).	

25. Lifelong Learning-An Australian Perspective (Ruth Dunkin).....	282
中譯本：教與學-終身學習 (Ruth Dunkin).....	283
26. Promoting Strategies of Lifelong learning in Higher Education In The Republic of China on Taiwan (Prof. Kuo-Shih Yang).....	289
27. Administration And Governance- Public And Private (John Niland).....	299
中譯本：公私立大學之行政與管理 (John Niland).....	309
28. Administration and Governance Public and Private (Yuan Tsun Liu).....	316
29. Research (Brian Stoddar).....	320
中譯本：研究 (Brian Stoddar).....	323
30. Australia Taiwan Conference On Higher Education Final Reports Plenary Session Research (Chao-Han Liu).....	326
31. Teaching And Learning (Trevor Grigg).....	327
中譯本：教與學 (Trevor Grigg).....	330
32. Administration And Governance-Legislative Framework (Robert Smith).....	333
Administration And Governance (Robert Smith).....	342
中譯本：行政與管理之法規架構 (Robert Smith).....	345
33. Official Closing (Prof Gavin Brown).....	353
中譯本：閉幕演說 (Prof Gavin Brown).....	356



SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

**TRANSCRIPT
OF PROCEEDINGS**

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

MONDAY, 8 APRIL 2002

OPENING KEYNOTE ADDRESS:

HIGHER EDUCATION IN AUSTRALIA

SPEAKER:

DR PETER SHERGOLD

SECRETARY

**DEPARTMENT OF HIGHER EDUCATION, SCIENCE AND
TRAINING, AUSTRALIA**

DR SHERGOLD: Friends, distinguished guests, colleagues, I am truly delighted to have the opportunity this morning to address this conference and to talk to the esteemed delegates that have gathered here today. It is, I think, a clear demonstration that the Australian and Taiwanese higher education sectors recognise the value of sharing and reflecting on how they have responded to the challenge of pursuing excellence in higher education.

I would like to extend a warm welcome to our Taiwanese guests: Dr Lu, deputy minister of education; Prof Wei-Jao Chen, president of the National Taiwan University and, of course, the leader of the delegation; other representatives from the Ministry of Education; Dr Lee, president of Academia Sinica; university presidents; vice-chancellors. I thank each of you for coming such a long way to participate in this conference and to share your experiences with our Australian colleagues. I trust your visit will be both valuable and enjoyable. I have arranged good weather for your visit! And South Australia has arranged the fine wine.

We are here today thanks to the combined efforts of several organisations. Firstly, I would especially like to thank the University of South Australia, the University of Adelaide and Flinders University for your joint efforts in sponsoring and organising the conference. I would also like to acknowledge those who contributed in various ways to ensuring the conference's success and, in particular, I would like to thank the Taipei Economic and Cultural Office in Canberra for their extraordinarily hard work in liaising with our colleagues in Taiwan; the Taiwanese Ministry of Education for their very generous sponsorship of Taiwanese speakers; the Association of Private Universities and Colleges, Taiwan; the Association of National Universities and Colleges, Taiwan; the Association of Technical and Vocational Education in Taiwan; and the Australian Vice-Chancellors Committee.

Of course, my department, the Department of Education, Science and Training, sees this forum as a moment of great importance and we will be active participants throughout. You can distinguish them by the flamboyant logos that they will be wearing on their lapels.

A little bit of personal history. I migrated to this great country in 1972 to take up a lecturing position at the University of New South Wales. I was offered a return air ticket and \$6,280, which at the time seemed extravagant, given that at that stage I was a doctoral student in London, living on two-fifths of nothing. I quickly discovered, well before the three years were out, that this was a country I admired and loved and wanted to stay in. But I tell you that because on my first day in this country I was taken to the university and was told that, unfortunately, for the first six months I would have to share my office with another new arrival, a Dr Fu Chi Lu from Taiwan, and so for the first six months of my time in Australia I shared my perceptions of this country with a very distinguished Taiwanese academic and I think together we came to terms with this new world.

I stayed in universities for, I suppose, 16 or 17 years and, as has been said, I

taught not only at New South Wales but at various stages at LSE and Pennsylvania State University and then left to work in the public service, and so the fact that I have only still a few weeks ago, in late January, become the head of this Department of Education is new for me, and in a real way I would have to say feels like a coming home in some regards. It means of course, having been the secretary of DEST for seven or eight weeks, that I can now speak with great authority and answer any of your questions with great trepidation.

I took up my position with DEST in late January and I have to say that since then I have been very pleasantly surprised to discover the extent and value of cooperation on education between our two countries. I don't just refer to conferences such as this, which are of great significance to our relationship, but to the many partnerships and linkages between our institutions, many of which are represented here today.

In 2001 there were no less than 75 agreements in place or being negotiated between Australian and Taiwanese higher education institutions, covering a broad range of student and staff exchanges and research collaboration programs. There is no doubt that these linkages add great value to our education and training sector. I would like to encourage you to use this uniquely important forum to explore new opportunities for mutually beneficial cooperation and the forging of new relationships.

It's no surprise that Australia and Taiwan are coming together to further explore the theme of this conference, Quality Assurance and the Pursuit of Excellence. The fact is, we share similar approaches to education. We together understand the vital role that higher education plays in empowering individuals and societies to pursue and achieve excellence. Now, more than ever before, higher education confers not only the benefits of enlightenment, academic expertise and personal fulfilment but is also the key to economic prosperity and higher living standards, and the importance of higher education will only continue to grow in this sense as we prepare for a future where knowledge and the way we use and share knowledge will be at the centre of many of our working lives and our individual and wider economic achievements. But higher education, I think, is far more than a pathway to economic prosperity and social development.

International education has become, of course, a major export industry of Australia. It is of increasing importance to our economic growth. But, to me, its value, symbolised in the relationship between the education sectors of Australia and Taiwan, is far more profound. I, like so many of you here today, recognise the fundamental significance of education in the promotion of understanding, tolerance and respect on which genuine harmony among nations is based. It's the great benefits which higher education can extend to our society that underpin the tremendous challenge to achieve excellence in the sector. Both the Taiwanese and Australian higher education sectors have undergone extensive reform in the past decade to address this challenge. Indeed, almost everyone here today will have been involved in developing,

implementing, even orchestrating, critical changes to higher education to respond better to the needs of students and to the changes occurring within our societies.

Crucial to the reform of our higher education sectors is quality, and the market for quality is global. Universities and their academic staff now measure themselves against international standards. Even traditional elite universities recognise that their continued quality and their continued quality standards will no longer be assumed. It has to be demonstrated by clear evidence about the quality of learning and research and the development of graduates with advanced knowledge, professional skills and an understanding of how to learn.

Of course, Australia has come a long way over the years in creating an educated society that underpins a robust and flexible economy with high productivity growth, well situated in the international marketplace. The number of people taking a university education in Australia has grown phenomenally over the last 50 years. We progressed, let us remember, from 30,000 students in tertiary education in 1950 to 480,000 students in 1990 and 726,000 students in 2001.

The growth in the number of students in higher education in Australia has been accompanied by significant change in the nature of the higher education sector. Universities have been subject to increasing competition with the entrance of new higher education providers, the blurring of traditional boundaries between them and the development of online delivery of education. Universities traditionally engaged in research have become important partners in Australia's national innovation system. Research student enrolments have greatly increased over the last decade, growing from about 16,000 in 1990 to over 37,000 in 2000.

Universities' income from fees and from charges and from other non-Commonwealth government sources has also increased markedly, from \$2.5 billion in 1995 to about \$4 billion in 2002. Universities, in other words, now have much greater levels of self-reliance. They are also increasingly working in collaboration with business and with other higher education institutions, both nationally and, as we will see in this forum, internationally. The universities are expanding from their traditional core business of teaching Australian students and research. They now combine that important traditional role with such activities as research commercialisation, consulting and the export of education.

In essence, I think the set-up of the Australian higher education system is a series of checks and balances, with responsibility spread among a range of players. Central responsibility rests with the universities, which were established as autonomous bodies by legislation, but this is within a robust framework set by state and Commonwealth governments. Indeed, the framework includes the protection of key terms such as "university" by companies and business names legislation. The Australian qualifications framework provides a structure for Australian awards and maintains registers

of approved higher education providers and courses.

The Commonwealth government is the prime funder of the higher education system. It provides substantial public funds to universities for teaching, research and capital expenditure as well as funding student income support. Linked to that funding role is the capacity to set broad policy directions for the sector and impose quality reporting measures. Universities currently submit an annual educational profile to the Commonwealth that outlines their strategies to achieve outcomes in key areas, including teaching, research and community service; information regarding student loads; detailed financial reporting. As part of that process, institutions submit plans in the areas of quality assurance, research and research training, indigenous education and equity. They are a means of public accountability for the quality of Australia's universities.

The Commonwealth government also provides tools and incentives to universities to measure and benchmark outcomes in teaching and learning, research and management. The Commonwealth has recently developed a benchmarking manual and annually funds surveys, including such things as the graduation destination survey, the course experience questionnaire, the newer postgraduate research experience questionnaire. Another Commonwealth-funded instrument to measure performance is the graduate skills assessment, which has been designed to assess the generic skills of university graduates.

The Commonwealth, indeed, recognised the need to facilitate continuous improvement in quality assurance arrangements in 2000 with the addition of two key elements to Australia's quality assurance framework. Those two were the national protocols for higher education processes and the Australian Universities Quality Agency. The national protocols were endorsed by Australian education ministers in March 2000. They ensure consistent criteria and standards across Australia, covering the recognition of new universities and accreditation of higher education courses, delivery arrangements for higher education courses involving non-university organisations, the operation of overseas higher education institutions in Australia, and the endorsement of higher education courses for overseas students.

Universities and governments worldwide are recognising the benefits of having a means of independently verifying their higher education quality assurance arrangements. In Australia, the establishment of the Australian Universities Quality Agency was endorsed by the Ministerial Council on Education in March 2000. That agency is an independent national body that will monitor, audit and report on quality assurance in Australian higher education. The agency has recently commenced its first round of audits of Australian universities and higher education accreditation authorities, which will conclude, I understand, in 2006.

At the same time, the substantial research efforts of Australian universities are instrumental in training the nation's future research workforce and promoting innovation and economic growth through the production and diffusion of

knowledge and skills. The government recognised the vital role Australia's universities play in the research and innovation system in January last year with the release of a new initiative entitled Backing Australia's Ability. This initiative, worth \$3 billion over five years, is the largest commitment to science, research and innovation by any Australian government. Over two-thirds of the total funding will be administered by the education, science and training portfolio. Most will benefit the teaching and research environment of Australia's universities.

In Backing Australia's Ability, the government flagged the need to promote research in which Australia enjoys or wants to build competitive advantage. Such research has now been identified. Following consultations which have informed the government's decision to focus the Australian Research Council's national competitive grants program for this year, four priority research areas have been selected. The four areas selected were genome-phenome research, complex intelligence systems, photon science and technology, and nano and bio materials. A total of 33 per cent of ARC funding in the 2003 round will be targeted to those four priority areas. They will support project grants and centres for up to five years, at a total cost of somewhere between \$150 million and \$170 million. This, of course, is only the start. An exercise is currently under way to establish national priorities across a wide range of government-funded research activities.

At the same time, Australia is looking at what challenges lie ahead for Australian universities. To this end the minister, Brendan Nelson, has recently announced a review of higher education. There is a general view, including from those who provide leadership within the sector, that Australia's universities are at a crossroads. There has been considerable public debate, and a wide range of policy options are already part of the everyday discourse that takes place within the senior ranks of university governance. Now is a time for decision.

Over the next six months, many of those present here today will be part of that review process. They and their colleagues will need to consider how best to articulate a package of public policy, policy that will strengthen the solid foundation of Australia's universities; that will encourage institutions to innovate, diversify and focus on their particular teaching, research and community strengths; that will provide them with the flexibility necessary to establish their financial capabilities. Through a rigorous process of consultation and discussion involving all those key stakeholders who share responsibility for delivering post-compulsory education and skills development, and looking to the continued strong leadership of Prof Deryck Schreuder and the Australian Vice-Chancellors Committee, the pathways to the future will be laid out.

There is, I discern, a palpable sense of commitment and urgency that needs to be translated into action. It would be foolish indeed to try and anticipate the outcomes from this rigorous and intensive process, but I do think I can make two commitments at the outset. First, that the conference's theme of pursuit of

excellence will lie at the heart of the challenge of how best to further enhance the standing of Australia's universities. That excellence, we will need to make explicit, can manifest itself in different ways; certainly to build a small number of world-class institutions acknowledged as key players in global research and teaching, but also to encourage universities to sustain excellence in innovative undergraduate teaching, take pride in their excellence, in capacity-building in the regional economies and the regional communities which they serve, and achieving even greater excellence in the international education that they offer to students from around the world.

Second, that the conference's central concern of quality assurance will be an increasingly important thematic motif in the consideration of future public policy. But, on this, my commitment may be rather different from that expected. It's delivered to you as a public servant, not as a politician. It's premised upon my strong belief that we must not fall into the bureaucratic trap of assuming that the more regulatory interference that is introduced the greater the assurance of quality. As a public servant, I need to recognise that universities are my partners in delivering quality education. Shackle them in administrative red tape and they will find it necessary to divert resources out of teaching into paper pushing.

Our challenge - and it will be met - is to maintain strong public accountability and to assure quality standards without unnecessarily prescriptive reporting, which too often serves only to constrain university innovation. University governance will inevitably be central to the higher education review. One important component of that is to ensure that my department focuses on outcomes, not process. I would hope that in the future we collect not one piece of paper, make not one demand, that is not necessary to ensuring public accountability for the quality of the higher education that universities provide.

I suspect that the aims we are pursuing are common to many countries which place quality and excellence at the forefront of their higher education agenda. In this respect Australia and Taiwan have much to offer each other in exploring the issues which will be discussed at this conference over the next couple of days. I feel certain that our shared interests will provide for a lively and productive exchange of ideas on how we can ensure that quality goes hand in hand with our efforts to pursue and achieve excellence within our higher education sectors.

Let me conclude by emphasising to all of you, but most particularly to our distinguished visitors, the importance that Australia attaches to this conference and the opportunity it affords for further cooperation with Taiwan and sharing information and ideas on the future direction of quality assurance and the pursuit of excellence in higher education.

I would like to thank the conference organisers for putting together such a thought-provoking and relevant program. It will be of great interest and use, both to Australian and Taiwanese participants. I thank you for the opportunity to be present today. I look forward to listening to the other speakers this

morning and to participating in the forum. Certainly I wish you well over the next few days in creating the next steps in a dynamic relationship and addressing some of the key challenges for higher education in the century ahead.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月8日（星期一）

開幕演說

澳洲高等教育

演講者

澳洲聯邦教育、科學暨訓練部常務次長

PETER SHERGOLD 博士

各位貴賓、各位朋友、各位同仁：今天早上有機會參加這次會議，發表演講，並與來自各地的貴賓代表交談，本人感到非常高興。我個人認為，這次會議的召開，清楚地顯示澳洲和台灣的高等教育界都認知到，在追求高等教育的卓越表現時，大家集思廣益，共同思考如何面對各種挑戰，是非常可貴。

我想向遠從台灣來的與會嘉賓們表達熱誠的歡迎之意。教育部呂次長木琳博士，國立台灣大學校長，同時也是這次台灣代表團的團長，陳維昭教授，教育部的其他代表，中央研究院院長李遠哲博士，以及各位台灣的大學校長們，我感謝各位千里迢迢來到敝國，參加此一盛會，與澳洲的同事們分享各位寶貴的經驗，我相信此趟澳洲之旅，你們一定會獲益良多，並且感到舒暢愉快。我已經為各位安排了風和日麗的好天氣，而南澳洲則為你們準備好了葡萄佳釀，就等著各位品嚐。

我們今天能夠在這裡開會，應該歸功於許多單位的共同努力。首先我要特別感謝南澳大學、阿得雷德大學以及福林德斯大學，感謝你們在籌辦此次會議時共同付出的努力。同時我也要感謝所有為此次會議籌辦工作貢獻心力的人士，特別是坎培拉駐澳大利亞台北經濟文化代表處的同仁們，感謝他們勤奮不懈地與我們駐台北的澳洲同仁們不斷地聯繫溝通。此外，我也要感謝台灣的教育部給予所有台灣主講者的慷慨經費補助，以及台灣的私立大學校院協進會、國立大學校院協會、中華民國技職教育協會及澳洲大學校長委員會的協助。

當然，澳洲聯邦教育、科學暨訓練部認為這次會議意義非常重大，因此我們的同仁將會熱烈地全程參與。他們衣領上的別針有色彩鮮豔的部徽，各位很容易就可以辨識他們。

容我簡單地自我介紹。我是 1972 年移民到澳洲，在雪梨的新南威爾斯大學任教。當時新南威爾斯大學給我一張來回機票以及六千二百八十澳元。對當時還在倫敦攻讀博士學位的我而言，這是非常優渥的待遇。還不到三年，我很快地發現澳洲是我很欣賞和喜愛的國家，我決定繼續留下來。不過我告訴各位這件事的原因是，我剛到澳洲的第一天，校方派員接我到學校，並且告訴我說：很遺憾地，學校空間不夠，前半年我必須與另一位剛從台灣來的老師，盧富祺（譯音）博士，共用一間研究室。因此，剛到澳洲的前半年，我與這位非常傑出的台灣學者分享對這個國家的觀感。我們一齊適應了這個新世界。

我在大學任教了十六、七年，不僅在新南威爾斯大學，同時也在英國倫敦政經學院以及美國賓州州立大學任教過。之後，我才轉任公職。事實上，幾個星期之前，也就是今年一月底，我才接下澳洲聯邦教育、科學暨訓練部常務次長這個

職務，目前已經駕輕就熟。擔任這職務七、八個禮拜，我想我應該夠資格回答您們的問題。

今年一月底，接下澳洲聯邦教育、科學暨訓練部的職務時，發現到我們兩國在教育合作上，已有相當程度和重要性，不免令我感到意外。我指的並不是類似今天會議的交流，而是兩國有許多教育機構彼此合作與相互結盟。我想這對我們兩國關係的發展是非常重要的。

截至 2001 年，台灣和澳洲的高教界簽訂的協議將近 75 份，其中包括師生交換計畫，以及研究計畫合作等。類似的交流當然對彼此都有許多助益，希望各位能夠利用這次難得的重要會議，趁機探討對彼此有利的合作計畫，並且締結新的雙邊關係。

今天，澳洲和台灣共同探討有關高等教育的品質保證及追求卓越的表現，可以說是水到渠成的發展。事實上，大家一起分享彼此的教育方法及步驟，並一致認為，在個人或社會獲致卓越成就時，高等教育是促成的重要因素。目前的高等教育不僅只是給予啟蒙教化、教導專業學術、實現個人理想；它更是與經濟的繁榮及生活水準的提高息息相關，尤其是邁向未來，當個人工作或生活需要達到更高的經濟成就時，我們愈需利用知識及專業技能。此時，高等教育便愈顯得重要。然而，高等教育不僅只是通往經濟繁榮及社會發展的途徑而已，它還有其他重要的目標。

提供海外學生教育服務已經成為澳洲一項主要的出口業，對澳洲的經濟發展更顯重要。對我而言，海外學生教育的價值對澳洲及台灣兩國的教育界是深具意義的。我想在座各位和我都認識到，兩國之間的和諧是藉由教育增進雙方的瞭解、容忍與尊重而促成的。當社會在追求卓越並面對挑戰時，高等教育的影響是不容忽視。過去的十年，台灣及澳洲的教育界都面臨重大的變革。在座的各位都曾面臨過高等教育這些重大的改變，並曾以更完善的方法，因應學生的需求以及社會的演變。

在高等教育的變革中，品質的維持與提昇是非常重要的，而教育品質的要求更是全球一致。即使是傳統的明星大學也必需持續維持教學的品質，並舉證說明重視學習及研究品質的好處，畢業生具備先進知識和專業技能，以及知道如何繼續學習的能力，因此也須追蹤他們未來的發展情況。

經過多年來的努力，澳洲已經創造出一個迎合國際市場脈動的教育環境，做為高生產，健全經濟的骨幹。在澳洲，接受大學教育的人數在過去五十年內成長

許多。1950 年只有三萬名大學生，1990 年成長到四十八萬名，2001 年則有七十二萬六千名。

隨著澳洲高等教育學生人數的成長，高等教育也有許多變化。大學漸漸面臨許多競爭者，例如為數眾多的技職院校以及網路函授教育。一向著重研究教育的傳統大學也成為全國教改方案中重要的角色。過去十年內，在大學以研究為主的學生人數成長許多，從 1990 年的一萬六千名成長到 2000 年的三萬七千名以上。

大學的收入來自學費，尤其來自非聯邦政府的相關贊助資源比例增加許多，從 1995 年有 25 億增加到 2002 年的約 40 億。換句話說，大學目前多可以自行開發財源，較不需聯邦政府的金源，他們也增加與國內或國外的企業或教育單位結盟合作，從原來教導澳洲學生及從事研究，擴展到企業商業研究、顧問諮詢協助、推廣海外教育等。

本質上，我認為澳洲的高等教育系統就是一連串的審查及平衡，權衡分置在不同的單位。主要的負責單位當然是大學本身，就立法而言，大學是個自主的個體，自行負責與管理，但受控於聯邦政府的建全的監督內，包括了“大學”這名稱的使用是受公司名稱法所保護的，還有例如相關的獎勵獎項、新設的課程及新學校的設立等。

聯邦政府是高等教育的主要財務贊助來源，主要提供大學教學、研究及學生獎學金等相關項目，此外需針對各校制定政策方向及實施大學品質評估。目前大學需對聯邦政府提出年度報告說明在教學、研究及社區服務方面的實施策略、方向及結果，此外學生的容納人數及詳細財務報表的相關資訊也需提出報告；在年度報告的過程中，有關教育品質的確認、教學研究、研究訓練、原住民教育及原住民的平等教育皆需提出實施計劃，這對澳洲大學而言也是一種社會責任。

聯邦政府也有獎勵辦法給大學評估教學、研究及管理的結果。最近聯邦政府歸劃評估手冊及年度費用評鑑，裡面包含有畢業生分布的地點、課程感想問卷、研究生的研究感想問卷。其他聯邦政府資助的評鑑還有大學畢業生的專業技能分析。

事實上聯邦政府為了加強教育品質及確保品質保證，在 2000 年增加兩項澳洲教育品質架構的協定，一項是全國高等教育的協定，另一項是澳洲大學品質機構。高等教育的協定是在 2000 年三月由澳洲教育部部長批准，此協定的內容適用在全國大學，並對各項事務訂定相同的標準，包括新學校的設立、新課程的認可、大學以外高等教育的網路函授課程、在澳洲設立的海外學生高等教育的營

運、海外學生高等教育的認可等。

全世界的大學或政府目前都認同設立高等教育品質確認辦法的益處，澳洲大學品質管機構是在 2000 年三月由教育委員會認可成立的，該機構是個獨立的政府單位，負責督導及稽核澳洲高等教育，近來該機構已開始進行第一階段澳洲大學及認可高等教育單位的稽核，預計 2006 年結束。

同時澳洲大學投注在教學研究的諸多心力透過知識與技能的傳播，有助益於訓練國家研究人力資源及促進經濟的發展與革新。政府認為澳洲大學在研究及研發系統扮演很重要的角色，去年一月展開「提昇澳洲競爭力」的新活動，預計五年耗資三十億，由澳洲政府各單位致力於科技、研究與發明的改革及發展，其中三分之二的花費著重於教育、科技及訓練，因此澳洲大學的研究及教學環境將受益許多。

為了提昇澳洲競爭力，政府加強研究教育，目前已確任並挑選了四項重點研究，分別為基因染色體研究、精密研究系統、光子科技及毫微米生化物質等項目。2003 年澳洲研究委員會的費用中有 33%將著重在這四項研究範圍，專案津貼及中心的補助最高可達五年，總花費約 1.5 億到 1.7 億，當然這只是開始的階段，目前政府正在籌組如何優先贊助國內研究計畫。

同時，政府也注意到澳洲大學正面臨的挑戰。教育部長 Brendan Nelson 醫生最近發布一份有關高等教育的報告，採納了澳洲教育界領導人的意見及大專院校目前的現況，廣納各方意見，也鼓勵大學的高層主管對許多政策公開辯論，綜合所有意見後，現在已經是做決定的時刻。

在未來六個月，很多在座的各位也會參與澳洲教育改革的過程，一同研討最佳的政策，包括強化澳洲教育基礎、鼓勵大學創新、多元化並著重教學、研究及社區教育的優勢，以具有穩定的財務及多元的財源。在 Deryck Schreuder 教授及澳洲大學校長委員會的領導與帶領下，經由磋商及討論，所有參與人對教育改革責無旁貸，要把高教的發展永續經營。

坐而言不如起而行，現在該是將計劃付諸行動的時候了，如果認為從澳洲教育改革的過程就能獲得所有的答案與結果，那就太不智了。我想一開始可以有兩項承諾；首先是此次會議的主題，追求卓越的教育將是提高澳洲大學的聲望的一項最主要的挑戰。卓越的教育將有許多方面來呈現，例如成立為數不多但具世界級聲望的院校；鼓勵大學在創新教學能維持卓越的水準，且以此為榮；各地方的大學能滿足當地學員知的需求，且回饋當地；並提供卓越的國際教育以吸引世界

各地來的海外學生。

第二項承諾，也是今天會議的主題之一，教育品質的保證，也是未來政策的考量主題。當然這與各位的對此的期望可能有所出入，因為我想讓大家知道我是位公職人員而不是政客。我認為我們絕不可以掉入官僚體制的窠臼中，認為更多的官方介入干涉才可確保教育的品質；身為一位公職人員，我認同大學是達到品質教育的合作夥伴，若大學教育受到官僚行政體系的束縛，他們將把著重在教育的心思改在行政公文的準備上。

我們的挑戰是維持社會責任並確認教育品質的水準，不應受到約定俗成的報告方式的限制，而影響到大學教育的創新。無法避免地，大學教育的管理對高等教育檢驗是很重要的，但對我工作的部門而言結果比過程更重要，我希望未來不只是一個口令一個動作，我想這不該是維持大學教育水準的社會責任。

我想我們在教育追求卓越及品質的目標上是與許多國家相似，澳洲在追求卓越教育品質的議題上有許多想法可以在這幾天的會議中與臺灣分享，雙方共同的興趣可以激盪出更多有益的想法，並一同努力追求達到卓越教育的目標。

最後我要再次強調，尤其是對在座的貴賓，澳洲非常重視這次的會議，而且希望藉由這次研討會與臺灣能進一步合作，並一同分享未來追求高等教育及確保品質的方向、想法及相關資訊。

再次感謝研討會的主辦單位能安排這項特別的活動，對澳洲或臺灣的與會者非常有助益，期望待會其他講者的演講與我們探討這次的主題，當然也預祝在未來的幾天能激發互利關係，並能一同探討未來二十一世紀高等教育所面臨的主要挑戰。

HIGHER EDUCATION IN THE REPUBLIC OF CHINA ON TAIWAN

Mu-Lin Lu, Ph.D.

Ministry of Education, Executive Yuan
The Republic of China

ABSTRACT

The Republic of China (ROC) on Taiwan is a small country with dense population and limited natural resources. And yet, this country overwhelmingly emphasizes the importance of education. In 1949, there were only one university, three colleges and three junior colleges with total student population of 6,665. After half a century, in the year 2001, there were 57 universities, 78 colleges and 19 junior colleges, and the student population grew up to 1,187,225. The total enrolment of students has reached almost 4.9 percent of the population of Taiwan.

In recent years, our government has been implementing educational policies of self-governance and pursuit of excellence in higher education. Thus, characteristics of the ROC's higher education include: (1) transforming from elite to mass university education, (2) parallel existence of public and private universities, (3) academic and administrative self-governance, (4) systematized program to promote excellence and quality in teaching and research, (5) building up recurrent education system for the general public, (6) issuing "White Paper on University Education Policy" and "Blueprint for Development of University Education" to be the basis for government to implement higher education policy and university development plan, and (7) providing incentives for merging, integration, and strategic union among universities.

At the beginning of the 21st century, the ROC is facing the challenges of rapid expansion and further development in higher education, promotion of a knowledge-based economy, trend of globalization, impacts associated with entering the World Trade Organization (WTO), and international competition. In order to cope with these challenges, we have established the strategic planning for higher education as follows: (1) formulating a global view in university education – to review the universities' roles and functions, and help universities to redefine themselves and develop their own characteristics, (2) establishing a complete legal foundation for universities – modifying the "University Law" and "Private School Law" to lay the legal foundation for the interaction between government and universities, (3) providing more self-governance space for universities and improving the higher education assessment system, (4) reviewing and expanding the resources of higher education and thereby assuring the quality of education and school management to enhance universities' competitiveness, (5) providing assistances for the development of private schools, (6) educating high-quality human resources for high-tech industries, and (7) encouraging universities to collaborate and compete with others internationally. Through those efforts, we expect to attain quality assurance in higher education. In this manner, we can upgrade human resources, and ensure higher national competitiveness.

**Australia Taiwan Conference
On
Higher Education**

April 8-9th 2002

Dr. Lu Mu-lin

**Vice-minister of Education
Ministry of Education
Republic of China**

Good Morning/Afternoon/Evening.

It is a sincere pleasure to have this opportunity, on behalf of Minister Huang and the Ministry of Education, to be able to express our appreciation to our international colleagues and friends who have worked so hard, in order to make this important event, a reality.

There are two words, which are indicative of the new international spirit that is emerging from the realms of higher education. These words are “collaboration” and “cooperation”. They also signify that with a strong sense of **purpose**, “quality” and “excellence” are obtainable.

For the next few days, we will have many opportunities to participate in events that can offer new and creative ways to strengthen our existing links of “collaboration” and “cooperation”. Each event of this conference has been carefully planned and coordinated. We have in attendance some of the finest senior researchers, educators, administrators and planners, from the highest circles of our international educational community. Therefore, it is our hope that exciting results will come from such a gathering.

In closing, please accept my good wishes for a very successful conference.

Thank you.

Good Morning/Afternoon/Evening.

On behalf of Minister Huang Jong-tsun and the Ministry of Education, I would like to extend our gratitude and appreciation to:

and all the other dedicated individuals whose support and efforts have greatly contributed to the planning and implementation of this year's Australia Taiwan Conference on Higher Education.

I would also like to acknowledge the honor, which has been bestowed upon Dr. Yuan Tseh Lee, by the University of New South Wales. To receive such a prestigious award, like a Doctor of Science, *honoris causa*, is the recognition of an individual's dedication to the pursuit of excellence and the outstanding contributions, which he has made to Science and Higher Education, not only in Taiwan, but internationally. Dr. Lee, is truly a remarkable man and an inspiration to us all.

Thank you, very much.

Good morning, afternoon, evening.

It is a pleasure to have this opportunity, on behalf of the Ministry of Education and Minister Huang Jong-tsun to welcome you to the Australia Taiwan Conference on Higher Education. This year's international conference is timely. It comes at a time, when educational institutions, all over the world are taking a long and close look at their existing forms of education. They are doing this, in order to help their citizens to become more fully prepared educationally for the changes and challenges that will come to them, as a result of living in a world of globalization.

We hope that this international conference will be fruitful. Its goals may be ambitious, however, we know from experience that if we exhibit care, knowledge, creativity and effort, the end results will be that our goals will have become our realities.

Please accept my good wishes for a successful conference.

Thank you.

HIGHER EDUCATION IN THE REPUBLIC OF CHINA ON TAIWAN

— ENHANCING INTERNATIONAL COMPETITIVENESS

Mu-Lin Lu, Ph.D.

Ministry of Education, Executive Yuan

The Republic of China

ABSTRACT

The Republic of China (ROC) on Taiwan is a small country with dense population and limited natural resources, this country overwhelmingly emphasizes the importance of education. In 1949, there were only one university, three colleges and three junior colleges with total student population of 6,665. After half a century, in the year 2001, there were 57 universities, 78 colleges and 19 junior colleges, and the student population grew up to 1,187,225. The total enrollment of students has reached almost 4.9 percents of the total population of Taiwan.

In recent years, the government has been implementing the educational policies of self-governance and pursuit of excellence in higher education. Thus, characteristics of the ROC's higher education include: (1) transforming from elite to mass university education, as well as parallel existence of public and private universities, (2) academic and administrative self-governance, (3) excellence in teaching and research, (4) building up recurrent education system for the general public, (5) issuing "White Paper on University Education Policy" and "Blueprint for Development of University Education", and (6) providing incentives for merging, integration, and strategic union among universities.

At the beginning of the 21st century, the ROC is facing the challenges of rapid expansion and further development in higher education, promotion of a knowledge-based economy, trend of globalization, impacts associated with entering the World Trade Organization (WTO), and international competition. In order to cope with these challenges, we have established the strategic planning for higher education as follows: (1) formulating a master plan for university education – to review the universities' roles and functions, help universities to redefine themselves and develop their own characteristics, (2) establishing a complete legal foundation for universities – modifying the "University Law" and "Private School Law" to lay the legal foundation for the interaction between government and universities, (3) providing more self-governance space for universities (4) reviewing and expanding the resources of higher education to enhance universities' competitiveness, (5) providing assistance for the development of private schools, (6) educating high-quality human resources for high-tech industries, and (7) encouraging universities to collaborate with international university to enhance the quality of education, and (8) improving the higher education assessment system. Through those efforts, we expect to attain quality assurance in higher education, upgrading of human resources, and higher national competitiveness.

Greeting from the Republic of China (ROC)

Ladies and Gentlemen, fellow scholars, distinguished guests. It gives me great pleasures to present “Higher Education in the Republic of China on Taiwan” before you at this Australia Taiwan Conference on Higher Education. Before, I begin; I’d like to thank the host here for their enormous efforts in organizing this conference. We are all very privileged and thankful for their hosting of this timely event.

I. Introduction

The Republic of China (ROC) on Taiwan is a small country with dense population and limited natural resources; this country overwhelmingly emphasizes the importance of education. Therefore, the government has nurtured human resources as the foundation for national development and progress. Internationally, Taiwan enjoys a high reputation due to its political democracy, dynamic society, and “economic miracle.” These successes are closely related to widespread compulsory education, and excellent development in higher education. The government has been a good model of the old Chinese saying, “Human resources are the basis of progress.”

During the rapid expansion of higher education, several problems have occurred, such as decreasing education quality, the exclusionary effect of limited education funds, and deteriorating school management practices. In addition, the decreasing birth rate and increasing international competition associated with the open market after entering WTO have become important issues of concern for government in higher education planning. How to build up a good environment for university development, assure quality in higher education, and enhance universities’ international competitiveness are questions deserving our attention.

II. Current Status

1. School System

Higher education in Taiwan includes junior colleges, and universities. According the different admissions qualifications, the 5-year and 2-year junior colleges admit students graduated from junior and high school (including vocational high school), respectively. Except 5 years for normal and teacher colleges, 6 years for dentistry, and 7 years for medical study, general universities and colleges all follow a 4-year study plan. There are 2-year and 4-year bachelor programs for universities of technology and institutes of science and technology. The 2-year bachelors’ programs admit students graduated from junior college; while students in the 4-year bachelors’ programs are vocational high school graduates. Like the general universities, universities of technology can offer programs leading to bachelor, master, and doctoral degrees. The institutes of science and technology can offer not only bachelor degrees, but also junior college programs. Since 1982, the post-bachelor medicine and Chinese medicine programs have been established; students in these programs take five years to complete their full study. The lengths of study for master and doctoral degrees are 1 to 4 and 2 to 7 years, respectively.

2. Categories and Numbers of Schools

In the year of 2002, there are 154 higher education institutes, including 19 junior colleges, 57 universities, and 78 colleges. The number of private schools is about twice that of public schools, with 53 public and 101 private schools.

Table I: The categories and numbers of ROC universities and colleges, 2002

Category		Public	Private	Sub-Total
University	general universities	18	24	42
	normal universities	3		3
	technical universities	6	6	12
College	general colleges	4	10	14
	teachers colleges	8		8
	technical colleges	11	45	56
Junior Colleges		3	16	19
Total		53	101	154

Source: The Statistics Bureau, Ministry of Education, ROC

Note: The public colleges include three physical education colleges and one art college. The private colleges include eight management colleges, one medical college and one liberal arts college.

3. Populations and Ratios of Students

(1) Student Growth in Higher Education

The number of students has expanded extremely rapidly, and now is about four times that in 1976. There were 299,414 and 442,648 total students in 1976 and 1986, respectively. In terms of public and private schools, students in private schools occupy 73 percents of the total student population. In terms of the percentage of private schools in higher education, ROC and South Korea rank first and second worldwide, respectively.

According to the statistics data from the Statistic Bureau of Ministry of Education, ROC, it shows that the gross enrollment rate for students who are 18 year-old is around 19.29 percents (including technical colleges and universities) and 13.09 percents (not including technical colleges and universities) in 2001. In terms of the number of students, among 373,793 18-year-old populations, there are 72,098 students (including technical colleges and universities) and 48,929 students (not including technical colleges and universities) in 2001, respectively. If it remains about the same number of students in next three years, the gross enrollment rate will reach 23.99 percents (including technical colleges and universities) and 16.28 percents (not including technical colleges and universities) in 2004. Though the enrollment rate increase annually, it is lower than that those developed countries, such USA.

According to the President Clinton's Congressional report on February 4, 1997, he stated that USA government treated education as a key factor of national competitiveness and raised three educational objects and one of them is to help every 18 year-old teenager be able to enroll into university or college, and all adult can continue their life-long learning. His statement reflected a master plan in the state of California in 1960, which planned to let every California high school graduates be able to enroll into University of California system, California State University system, or local community colleges (junior colleges). Students are able to enter different system according to their capability. From ROC government's point of review, the importance and development of higher education always is the highest priority for our educational as well as national policy. The efforts on developing higher education in Taiwan will be continued. Therefore, a project similar to the California's master plan led by Dr. Chao-Han Liu, President of National Central University, will formulate a master plan for Taiwan higher education.

Table II: Growth in number of ROC universities and students

School Year	Category	Number of Students				
		College	University	Masters	Doctoral	Total
1976	Public	38,157	58,345	3,064	260	99,826
	Private	115,899	82,512	1,074	103	199,588
	Total	154,056	140,857	4,138	363	299,414
1986	Public	53,536	69,251	8,238	1,787	132,812
	Private	190,946	115,478	3,056	356	309,836
	Total	244,482	184,729	11,294	2,143	442,648
1996	Public	63,730	137,890	25,424	8,288	235,332
	Private	349,107	199,947	10,084	1,077	560,215
	Total	412,837	337,837	35,508	9,365	795,547
1998	Public	63,928	153,891	30,645	9,539	258,003
	Private	388,418	255,814	12,380	1,306	657,918
	Total	452,346	409,705	43,025	10,845	915,921
2000	Public	55,294	178,509	49,413	11,968	295,184
	Private	388,888	385,550	20,626	1,854	796,918
	Total	444,182	564,059	70,039	13,822	1,092,102
2001	Public	48,222	195,610	60,782	13,700	318,314
	Private	358,619	481,561	26,469	2,262	868,911
	Total	406,841	677,171	87,251	15,962	1,187,225

Source: The Statistics Bureau, Ministry of Education, ROC

(2) Gross Enrollment Rate in Higher Education

The expansion of higher education is a worldwide trend. According to the statistics, the worldwide average school age enrollment rate in higher education increased from 13.5 percents in 1990 to 16.7 percents in 1996. In developed countries, the enrollment rate increased from 36.8% to 50.5%. The ROC's gross enrollment rate in higher education was 34.1 and 47.7 percents in 1990 and 1996, respectively, which were a little lower than those in developed countries. However, this rate increased to 60.9 percents in 1999 and 67.8 percents in 2000, which demonstrates the rapid expansion of higher education in the ROC.

Table III: Comparison of school age gross enrollment rates in higher education

Country/year	Unit: %										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Worldwide average	13.5	12.8	13.9	15.5		16.2	16.7				
Developed countries	36.8	37.7	41.7	47.4		51.0	50.5				
Developing countries	8.3	7.2	7.7	8.8		8.9	9.6				
ROC	34.1	37.9	42.0	45.0	45.3	46.4	47.7	51.1	56.1	60.9	67.8
Hong Kong			19.6	21.9							
Singapore						33.7	38.5				
Japan				34.5	40.3						
South Korea	39.2	40.5		46.4	50.8		60.2	68.0			
USA	74.5	76.2		80.6	81.1	81.0					
Canada	69.8	72.1			72.2	90.2					
United Kingdom	27.8		37.4		48.3	49.5	52.0				
France	40.0	43.2	45.6	49.5		51.0	51.0				
German	36.1			35.6	42.7	44.4	47.0				
Italy	30.7	31.7	33.7	37.3	40.6	41.4	47.0				
Spain		39.5	41.1		46.1	48.6	51.0				
Australia	34.5	38.6	39.6	41.9		71.7	75.6	80.0			
New Zealand		44.8	49.7	57.5		58.2	58.5	63.0			

Date Source: UNESCO

Note: The higher education student enrollment rate = 18 to 21 year-old college student numbers (not including non-matriculating students) / 18 to 21 year-old population.

(3) Net Enrollment Rate in Higher Education

The net enrollment rates in ROC higher education are 14.5 percents at university level (lower than that in developed countries), 14.6 percents at junior college level (slightly lower than that in Belgium and Canada). Historically, the net enrollment rates of university and college were 11.3 and 12.2 percents in 1992, increasing to 19 and 16.4 percents in 1999, respectively.

Table IV: Comparison of international school age net enrollment rate in higher education (Unit: %)

Country\Year	1992			1994			1995			1996			1999		
	Total	Junior Col.	Uni.	Total	Junior Col.	Uni.	Total	Junior Col.	Uni.	Total	Junior Col.	Uni.	Total	Junior Col.	Uni.
ROC	23.5	12.2	11.3	26.3	13.4	12.9	27.8	14.2	13.6	29.1	14.6	14.5	35.4	16.4	19.0
Japan							42.4	10.7	31.7				49.3	10.4	38.9
USA	38.8	13.8	25.0	34.9	13.6	21.3	34.7	12.8	21.9	34.6	12.9	21.7			
Canada			23.9	40.2	14.0	26.2	37.9	14.5	23.4	40.5	17.3	23.1			
United Kingdom	18.1	3.9	14.2	23.5	4.8	18.7	25.8	4.9	20.9	26.9	4.7	22.2			
France	29.0	8.8	20.2	33.2	9.9	23.3	34.2			36.0					
German	9.7	2.3	7.4	11.1	2.4	8.7	10.6	2.7	7.9	10.8	2.9	7.9			
Spain	22.8	0.3	22.5	25.5	0.6	24.9	25.6	0.7	24.9	27.3	1.0	26.3			
Belgium	31.4	14.5	16.9	37.4	18.9	18.5	40.7	21.6	19.1	39.6	20.0	19.6			
Australia	41.7	22.9	18.8	29.2	8.7	20.5	29.8	8.7	21.1	31.3	8.4	22.9			
New Zealand	25.9	7.1	18.8	30.9	7.1	23.8	28.6	5.9	22.7	29.4	6.1	23.3			

Source: The Statistics Bureau, Ministry of Education, ROC

(4) Funding for Higher Education

The funding for higher education in the ROC used to enjoy a high portion of the total education budget, such as 56 percents in 1993 and, the highest, 62 percents in 1997. Since the implementation of the school funding system in 1997, the public universities must raise part of their own funding. Therefore, the funding for public universities has decreased annually. The annual higher education budget occupied the portion of total budgets of Ministry of Education were 1998-59%, 1999-53%, 2000-52%, and 2001-46%, respectively. In 2002, the funding for public universities increased to 48% of the total education budget. Regardless of these changes, the funding for higher education retains the highest single share of total education funds. Averagely, the funding support to private schools remains around 20% of the private school's annual operation budgets.

III. Characteristics of Higher Education

1. Transforming from Elite to Mass University Education

According to the higher education development model reported by Mr. Trow in 1970, there are three categories of higher education; elite, mass and popular. When higher education admission rate is less than 15 percents, it is classified as elite style. Admission rate between 15 and 50 percents is higher education for the masses, and that over 50 percents is classified as

popular-type higher education. In the past three years, the admission rate via the Joint University Entrance Examination (JUEE) has remained around 60%. According to this admission, ROC's higher education has reached the popular stage.

Moreover, in 1990, the ROC higher education population was 2.27 percents of total population. This number was similar to that in Japan and United Kingdom, much lower than other developed countries. In 1996, this number increased 3.15%, which is close to that in Japan and United Kingdom. In 1999, that number became 3.69 percents of the ROC population and approached 4.9 percents in 2001.

Table V: Comparison of the percentage of higher education population in the total national population (unit: %).

Country/year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2001
ROC	22.7	24.2	26.0	27.4	28.6	29.8	31.5	34.0	36.5	36.9	49.0
Hong Kong			15.3			13.1					
Singapore		10.3		19.7		15.8	19.6		20.0		
Japan	21.3	22.0	22.8	23.6	24.2	24.4	31.3		31.3		
South Korea	39.5	40.7		38.3		41.9	45.5		49.6	52.1	
USA	54.9	41.1	40.9	40.9	39.6	39.3	37.8				
Canada	51.1	52.5		69.5	70.4	60.0	59.4				
United Kingdom	20.9	24.0	26.3		23.6	31.4	31.3				
France	29.9	32.3		36.0		36.8		35.3			
German	29.5	27.8	25.7	23.1	22.8	26.3		25.4			
Italy	25.0	26.6	28.4	29.5	31.3	40.2		32.9			
Spain		33.4	35.1		39.0			42.9			
Australia	28.4	30.9	32.0	54.6		53.5	55.5	56.5			
New Zealand		37.9	42.9	47.2		46.3	45.1	47.3			

Source: The Statistics Bureau, Ministry of Education, ROC

2. Academic and Administrative Self-Governance

Before 1984, the Ministry of Education (MOE) governed all university operation systems. There was no self-governance for schools. Based on the spirit of academic and administrative self-governance, the modification of the "University Law" was completed in 1984. The relationship between government and university becomes one of assisting and releasing, instead of controlling and restricting. The organization, personnel, curriculum, recruitment, student management, financial planning, faculty hiring and faculty qualifications are now under the universities' own management.

3. Excellence in Teaching and Research

Regarding the improvement of teaching quality, a special project was conducted in 1984, which emphasized the necessary measures to improve teaching quality in all schools. In 1988, "Measurements for maintaining and enhancing standard of higher education" was released as a

reference for all universities to improve teaching quality. In the year of 2000, a project for “Upgrading university fundamental education” was promoted to enhance universities’ fundamental and general studies.

In order to upgrade research quality in universities, the Ministry of Education and National Science Council jointly offered a total of NT\$13 billion for a 4-year project, “Pursuit of Excellence for University Academics,” which allowed universities to propose competitive research projects for review and evaluation. As a result, a maximum NT\$500 million research project was granted for projects that are extremely helpful for building up solid research bases for universities in the ROC.

4. Building up Recurrent Education System for the General Public

In order to catch the trend of life-long learning, we have planned a recurrent education system for the general public that is divided into two categories: 2-year bachelors’ and masters’ programs. Over the past few years, the number of students benefiting from this is increasing dramatically.

Table VI. Enrollment in recurrent education in the ROC

Year	2-year bachelor’s program		master’s program		Total students
	Students	Growth rate	Students	Growth rate	
1999	1490	-	3493	-	4983
2000	2090	40.27%	5590	60.03%	7680
2001	2430	16.27%	7097	26.96%	9527
Total	6010		16180		22190

Source: The Statistics Bureau, Ministry of Education, ROC

5. Issuing “White Paper on University Education Policy” and “Blueprint for Development of University Education”

In order to face the challenges of the knowledge economy era, a “White Paper on University Education Policy” was established in August of 2001, which serves as the basis for government to implement higher education policy and for each university to have their own development plan. This white paper also allows the general public have a better understanding regarding the development of higher education. At the same time, a “Blueprint for Development of University Education” was planned, which emphasized the definition and a integration of university, and promoted operation more efficient, excellent and internationally competitive university operations.

6. Providing Incentives for Merging, Integration, and Strategic Union among Universities

In order to integrate the limited resource and strengthen university competitiveness, the Cha Yi Institute of Science and Technology and Cha Yi Teachers College were merged into the National Cha Yi University under the encouragement of the Ministry of Education in 2000. This set up a good model for higher education mergers. In 2002, we set up a “University Integration Plan” which allows university merging to be a core of development and provide financial incentives for integration among a variety of universities. Since the announcement of the “University Integration Plan”, several integration moves are underway. Currently, there are a total of 22

universities strategically formed into four university unions. The Ministry of Education will carefully evaluate these integration plan and give the necessary financial support.

IV. Problems in Higher Education

According to the distribution of the ROC's education resources, the public (national) universities used to totally rely on government support and private universities heavily depended on the income from tuition fees. This caused a great difference in educational resources between national and private universities. In order to narrow the gap, the government has gradually increased the financial support to private universities and increased the percentage of school funding that national universities must raise. With the recent years' efforts, the discrepancies have been improved. However, the Ministry of Education must increase funding for primary and secondary education, early childhood education, aboriginal education, and special education. In addition, expansion of universities, reduction in student population, internationalization and loss of students due to the attraction from Mainland China universities, have all limited funds available for higher education. The education funds have become extremely exclusionary for all universities. Therefore, the available education funding for the average ROC university student is lagging behind that in other Asian countries, which strongly affects our universities' international competitiveness.

Though there have been significant progresses in international exchange between ROC universities and universities abroad, there is still a lot of room for improvement, if we want to compare with the world-class universities. There are many reasons, such as insufficient funding, inflexible systems, no obvious incentives and limiting regulations, which make local curriculum unattractive to international students. There are hardly any special departments or personnel in ROC universities focused on international affairs and exchanges. The number of papers published in international journals, quantity of foreign-language publications, number of professors attending international conferences, and international speeches and papers, are all in need of improvement.

According to article 4 of the "University Law", a university should plan its development direction and emphasis, and then get the endorsement and assessment evaluation from the Ministry of Education. In article 14, it states that the main function of the school affairs committee should be to plan for teaching and research assessment. Presently, as the number of universities has reached the saturation level, the assessment system has become an issue of common concern for improving the quality of university education. However, it is not easy to conduct a general assessment of universities, mainly due to the local lack of professional assessment organizations to conduct various assessments of universities, insufficient personnel, and limited incentives for conducting assessment.

V. Strategic Planning for Higher Education

1. Formulating a Master Plan for University Education

For the purpose of ROC university development and competitiveness, the Global View Planning Committee, Executive Yuan, had its first meeting on January 20, 2002. Topics discussed included the university's objectives and vision, definition of university, categories and characteristics, university's operation functions, cooperation between business and university, and role/development of private university. The Ministry of Education future policies and reforms

were also discussed, which will trigger further progress and development for higher education in the ROC.

2. Establishing a Complete Legal Foundation for Higher Education

The ROC is a democratic country where the interaction between universities and the Ministry of Education strongly depends upon a solid legal foundation. According to Article #162 of the ROC constitution, "Every public, national and private education and cultural institution is supervised by ROC law." Section 2, Article #1 of the University Law states, "Universities should receive protection for academic freedom, and enjoy the right of self-governance under the regulations of the law." Supreme Court Article #380 also explains that the proper law must regulate the governmental supervision of universities. In order to match the Administrative Procedure Law that took effect on January 1, 2000, the Ministry of Education actively modified the "University Law," "Private School Law," and "Degree Granting Law." The key point of modification of the "University Law" was to clarify universities' self-governance and identification of national universities. The modification of the "Private School Law" granted more flexibility for self-governance. The modification of the "Degree Granting Law" established a more flexible school system and allowed universities have more room for development in teaching, research, and services.

3. Strengthening University Self-governance System

The university is a center of knowledge where full freedom is expected so that the freedom of academics and professions can be preserved. According to the modified "University Law" in 1984, there is now an emphasis on academic and administrative self-governance in higher education. It does not only allow a university enjoy total right of self-governance, but also establishes the school affairs committee as the highest decision-making body in a university. However, the developed results are over-democratization, as well as arguments between the joint-resolution system and presidential system so that the president of the university must take full responsibility with no associated authority to have an integrated planning for teaching and research. The election of president and academic administrators also results in severe political fight among faculties, which has exhausted internal resources mentally and physically. Though universities enjoy the full rights of self-governance, the organization, funding, personnel, recruiting account, and recruiting methodology should receive endorsement from the Ministry of Education. The ideal type of university self-governance needs to be readdressed.

The Ministry of Education is planning several related strategies to strengthen university self-governance, such as the promotion of university multiple-channel entrance system, which authorizes universities to add, drop and modify their own departments and majors, enhance flexibility in using school funding, and speed up the process allowing universities to review their own professors' promotions so that the university's self-governance system can be fully developed.

4. Reviewing and Expanding the Resources of Higher Education to Enhance Universities' Competitiveness

According the law of "ROC Education Funding Distribution and Management," education funding is guaranteed at or above 21.5 percents of the average of the past three years total government capital expenditures. This law stabilizes education funds with legal enforcement, which is

helpful for the development of education. However, this law cannot satisfy the demand placed by new issues. The Ministry of Education restricts establishment of new schools and set-up of branch campuses for national universities. The proper ratio of governmental support for national to private university must be reviewed as well. A measure is now proposed for the private sector to participate in the development of universities. The Ministry of Education also strongly encourages the cooperation between industry and university, as well as promoting continuing education and fund raising for university. Therefore, we can conserve the limited resources on one hand, and expand the possible financial resources on the other hand, which helps universities enhance their competitiveness.

5. Providing Assistance for the Development of Private Schools

The number of schools and students in private schools are much higher than those of public ones. Therefore, the educational quality in private schools significantly influences the outcome of higher education. In order to help private schools' development, measures have been planned, such as financial support for private schools, promoting the establishment of private educational founding of schools, and setting up an auditing system to monitor the use of government support in private schools.

6. Educating High-quality Human Resources for High-tech Industries

In order to meet the demand for high-quality human resources in the knowledge economy, the educational needs for the high-tech industry is under review. For solving the shortage of high-quality human resources, the "National Silicon Guidance Plan" as well as the "Special Project of Expanding the Information, Electronics, Electrical, Optoelectronics, and Telecommunications Majors in University" have been implemented. At the present time, we are reviewing the advantages for developing bio-tech industry and a strategic plan for educating the human resources for the bio-tech industry.

7. Encouraging Universities to Collaborate with International Universities and Enhance the Quality of Education

Since the entrance into the World Trade Organization (WTO), the ROC government has sped up the collaboration and exchange between local universities and universities worldwide. The measures are: (1) assist universities to hold recruiting exhibitions overseas, (2) relax the restrictions on universities having overseas continuing education programs, (3) form a task force to deal with WTO education issues, (4) encourage universities to join an international assessment system to evaluate their own education result in terms of international standards, and (5) improve foreign language education to enhance students' international competitiveness.

8. Improving the Higher Education Assessment System

The Ministry of Education continues to conduct general assessments on the development of university affairs, as well as general study assessments. The study of the university assessment system is continuous. In 2001, MOE cooperated with National Research Institute of Sanitation to conduct a 5-year assessment for medical universities, mapped out the plan of assessment for this single subject and will report to the university assessment committee for approval. In the future, the Ministry of Education continue to determine the possible assessment systems for a

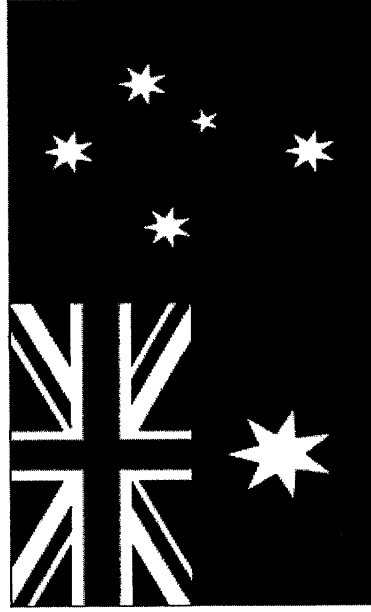
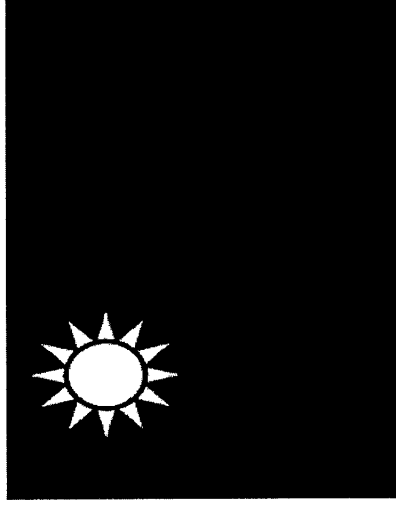
variety of subjects on its own, or in conjunction with objective academic research institutes to conduct university assessments. The results of fair public assessment serve as a reference for university development. In 2002, in addition to the assessment for medical schools, the assessment for the subjects of management and engineering will be implemented, followed by other subjects. In the meantime, the Ministry plans to connect the present assessment of university development affairs with an international assessment system, which will allow ROC universities to compete with international universities.

VI. Conclusion

Here at the beginning of the 21st century, the ROC is facing the challenges of rapid expansion in higher education, economic inflation, development of a knowledge-based economy, the trend of globalization, impacts associated with entering the World Trade Organization (WTO), and international competition. In order to deal with these challenges, we continue the reform on higher education, enhancement of university education quality and efficiency, the pursuit of excellence, and strengthening international competitiveness. We strongly believe that continuous reform and international cooperation will significantly improve the quality of university education as well as upgrade the standards of life and culture for human being.

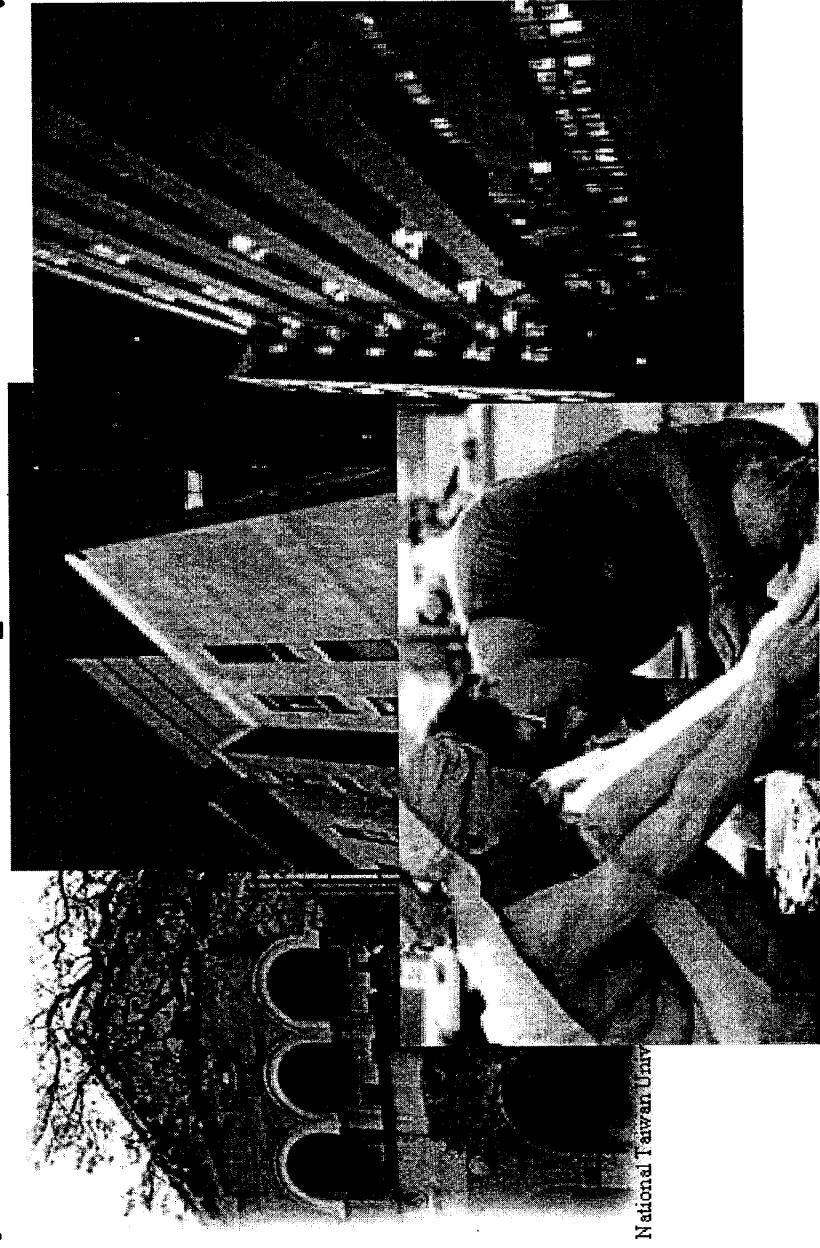
The former Minister of Education, Dr. Chih-Lang Tseng, once told a story. “Three busy working construction workers”. Someone asked them, ‘What are you doing?’ The first worker responded, ‘Nothing, I am working on constructing a wall.’ The second worker replied, ‘I am making a beautiful house.’ The third worker answered, ‘I am building a great church.’ Though the three workers were doing the same job, each of them had a different vision.” The higher education is to educate the potential and intelligent young men/women who can build up their own vision of future and dream, which will be beneficial for the whole world. Therefore, the “engineering of higher education” is not a short-lived construction, but will be a great church enjoying the highest glory.

Hello From Taiwan



Mu-Lin Lu, Ph.D.
Ministry of Education, Executive Yuan
The Republic of China

Higher Education in The Republic of China on Taiwan



National Taiwan Univ

HIGHER EDUCATION IN THE REPUBLIC OF CHINA ON TAIWAN

— Enhancing International competitiveness

Outlines:

I. Introduction

II. Current Status

- 1. School System**
- 2. Categories and Numbers of School**
- 3. Populations and Ratios of Students**
- 4. Numbers and Structures of Teachers**
- 5. Ratio of Teachers to Students**

III. Characteristics of Higher Education

- 1. From elite to mass Educational Opportunities**
- 2. Diversity in School Management**
- 3. Academic and Administrative Self-Governance**
- 4. Excellence in Teaching and Research**
- 5. Open Recurrent Education Programs**
- 6. Establishment of “White Paper on University Education Policy” and “Blueprint for Development of University Education”**

IV. Problems in Higher Education

- **Exclusionary Effect of Limited Higher Education Funds**
- **Inadequate Progress in Internationalization of Higher Education**
- **Need for Establishing Higher Education Assessment System**
- **Need for Strengthening Self-governance System in Higher Education**

V. Plans for Further Development in Higher Education

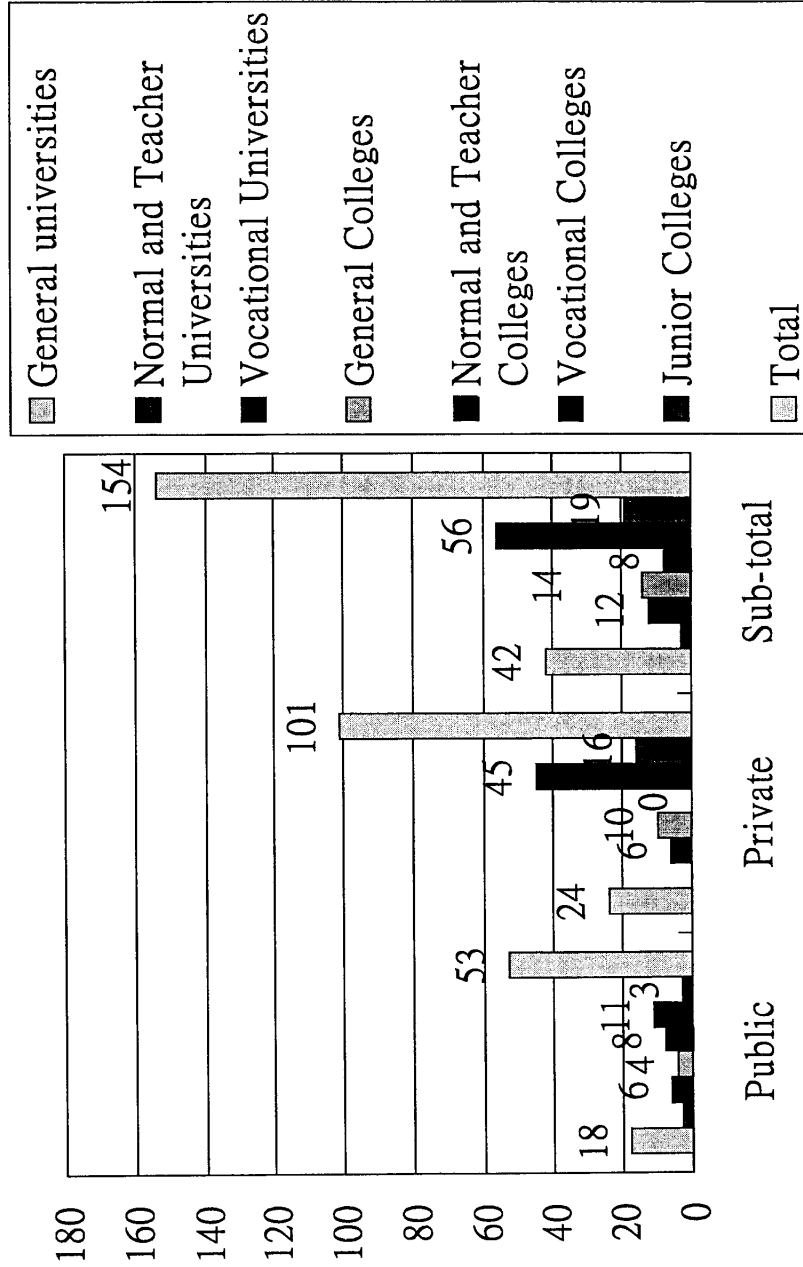
- (1) formulate a global view in university education
- (2) establish a complete legal foundation for universities
- (3) provide more self-governance space for universities
- (4) review and expand the resources of higher education

- (5) provide assistance for the development of private schools
- (6) educate high-quality human resources for high-tech industries
- (7) encourage universities to collaborate and compete with others internationally
- (8) improve the higher education assessment system

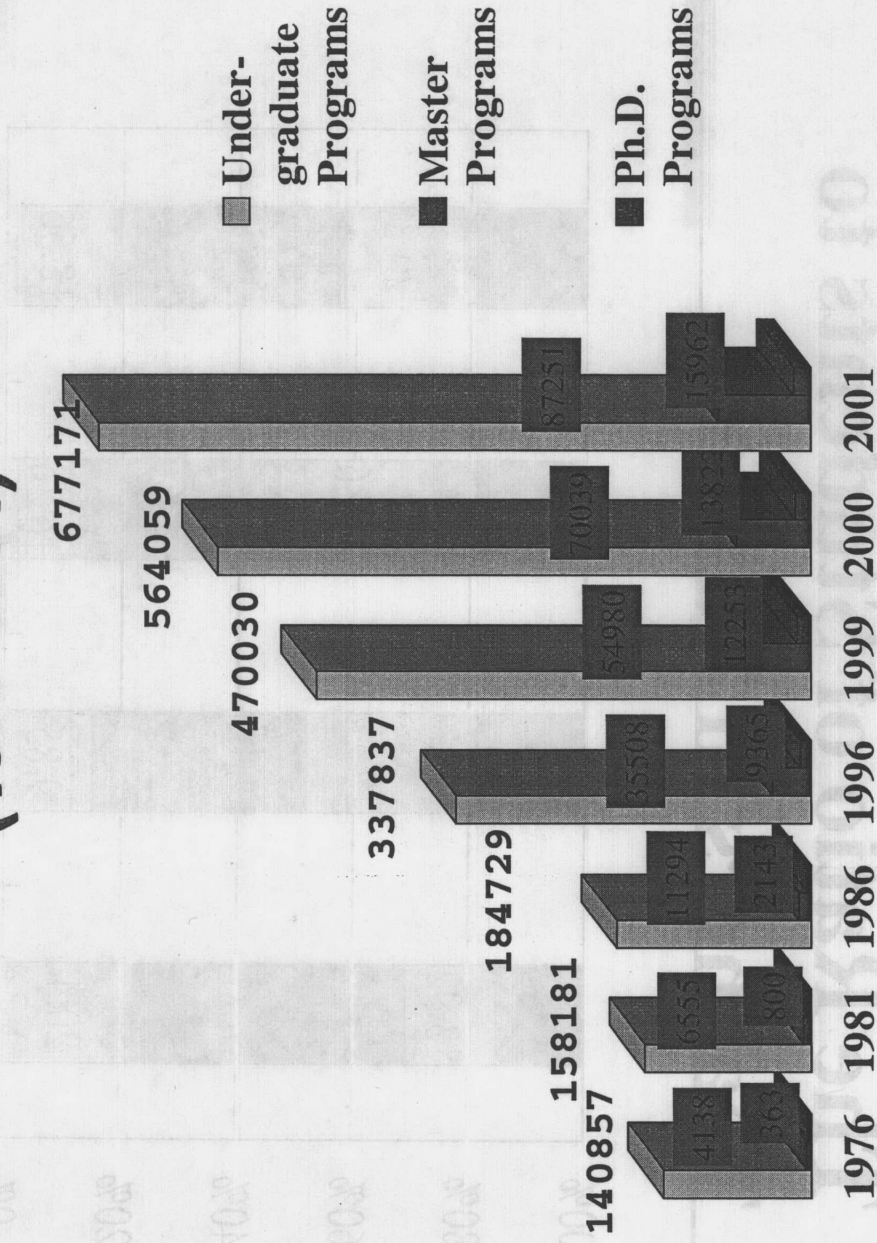
II. Current Status

- **School System**
 - * **5-year and 2-year junior colleges**
 - * **universities**
 - 5 years for normal and teacher colleges,
 - 6 years for dentistry
 - 7 years for medical school
 - 4 years for general universities and colleges

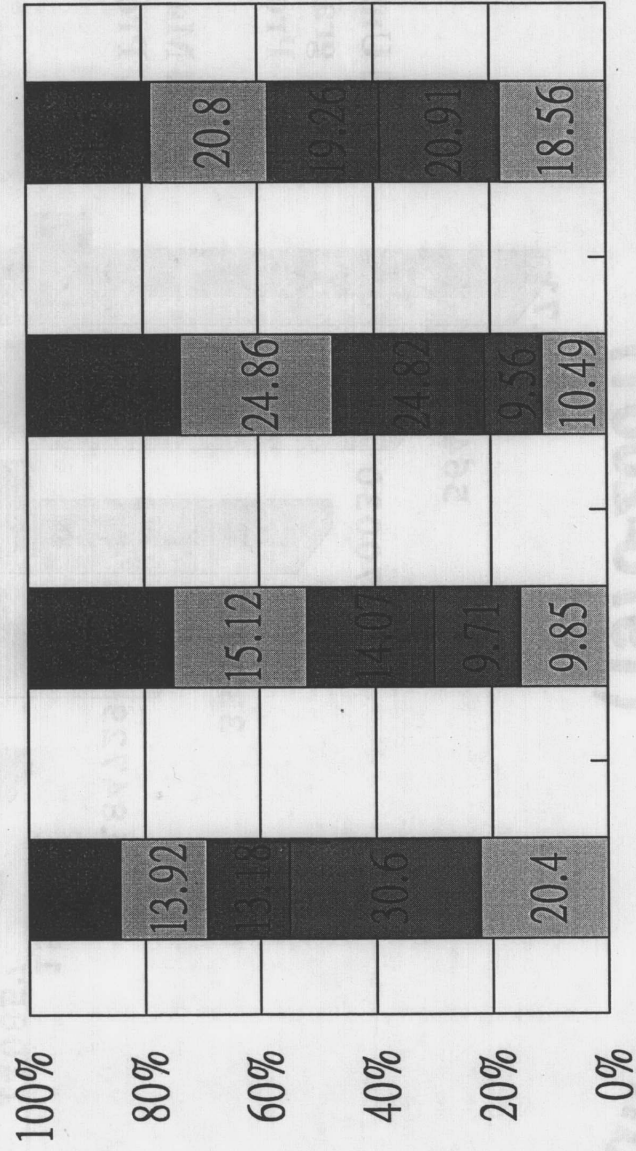
The Analysis of ROC Universities and Colleges, 2002



Number of Enrollment in ROC Universities (1976-2001)



The Ratio of Students to Teachers in Taiwan



Public

ERROR: syntaxerror
OFFENDING COMMAND:

STACK:

```
-mark-  
]  
109.0  
-1.0  
-1  
0  
0  
1  
[  
true  
122  
42  
-mark-  
/GF5  
[41.0 0.0 1.0 -13.0 43.0 109.0 ]  
/GF5
```

NEW DEVELOPMENTS IN UNIVERSITY GOVERNANCE

Professor Deryck Schreuder

Vice-Chancellor and President, University of Western Australia

President, Australian Vice-Chancellors' Committee

ABSTRACT

The size and composition of university governing bodies has been the subject of much attention in Australian higher education circles for more than a decade. University governing bodies have been getting smaller over this period. The trend to reducing the size of governing bodies began with the higher education reforms initiated by former Education Minister John Dawkins in the late 1980's. The Dawkins policy statement on higher education in 1988 criticised the size and representative aspect of governing bodies, seeing them as impediments to streamlined administration. As a result some state governments were persuaded to amend university establishment acts to reduce the size of governing bodies. The Report of the Higher Education Management Review in 1995 (the Hoare Committee) reinforced this view. The Hoare Committee recommended that university governing bodies be between 10 and 15 members for effective operation. The average size of governing bodies has fallen from 27 in 1990 to 21 currently with the reductions primarily in the states of South Australia, Tasmania and Victoria. Governing bodies range in size from 13 at Bond University to 35 at the University of Queensland with the majority of universities having governing bodies of between 20 and 25 members. While this is short of the target set by the Hoare Committee I believe that the effectiveness of governing bodies is not related solely to their size. Universities need to maintain the representative aspect of governing bodies by ensuring an appropriate balance of internal and external members, an optimum mix of skills and experience and stakeholder representation and expertise. My presentation looks at the role and responsibilities of governing bodies in a large modern university, their composition, the background of members and how their performance is evaluated using the example of my own institution, The University of Western Australia. Of crucial importance is the relationship between the Vice-Chancellor and the governing body as this is a key element of the link between governance and management. The presentation concludes by looking at the challenges now facing governing bodies. In 2001 a federal parliamentary committee released a report on higher education critical of the commercial practices of universities. The report pointed to alleged deficiencies in the processes of accountability, particularly in relation to the audit requirements of the commercial arms of universities and in joint ventures. Partly as a result of this report, the governments of New South Wales and Victoria have initiated their own inquiries into corporate governance. The new Federal Minister for Education, Science and Training, Dr Brendan Nelson has indicated that the government will be undertaking a major review of higher education over the next six months. University governance and administration is likely to be one of the issues examined.



SPARK AND CANNON

Telephone:

Adelaide (08) 8212-3699
Melbourne (03) 9670-6989
Perth (08) 9325-4577
Sydney (02) 9211-4077

**TRANSCRIPT
OF PROCEEDINGS**

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

MONDAY, 8 APRIL 2002

KEYNOTE ADDRESS:

NEW DEVELOPMENTS IN UNIVERSITY GOVERNANCE

SPEAKER:

PROF DERYCK SCHREUDER

**VICE-CHANCELLOR AND PRESIDENT, UNIVERSITY OF
WESTERN AUSTRALIA**

AND

**PRESIDENT, AUSTRALIAN VICE-CHANCELLORS COMMITTEE,
AUSTRALIA**

PROF SCHREUDER: Minister, delegates and fellow vice-chancellors, former vice-chancellors and former presidents of the AVCC, members of the educational community including the editor of Campus Review, friends of our system - and many in this room are very knowledgeable about education; senior professionals from our system. I'm delighted to be here and say a few words from the perspective of AVCC about the system at large, with a broad picture. I haven't got anything so dramatic to tell you as that figure of 305 members of a council. It's a tame story from me. But I'm delighted to give you a picture of where the university sector is at the moment as far as university governance goes.

I apologise immediately in advance that some of these overheads are going to have some unusual designs across them. I thank Prof Chen very much for speaking first so that it allowed us to turn our PowerPoint into overheads. When you do that you get some quite curious - I think those were colours on the original overheads. But we have managed, and I thank those - I think Laurie particularly and others in the office here - who have been so good as to organise for us to be able to turn the PowerPoint documents into these overheads. I will work on them as if we're looking at a PowerPoint, so just put the colour in as you move along here.

I do thank Peter Shergold for the excellent weather. I was going to suggest that it's nice to come here and have Western Australian weather, but I'm able to put another line in: if there is a wine crisis, just let me know. We have Margaret River and we could give you the most wonderful wine. I don't want the conference to go short of wine.

I think already in the discussions we've had this morning and the last presentation you can see some of the value that comes out of sectors talking to each other, and one of the key ones is not just in a sense learning about challenges; and the challenge in both cases between our sectors is one of excellence and there are challenges about building linkages, and that's going to be talked about here, too. That's all very important.

One of the things that really does come out is the fascinating capacity to compare and to do this on an international basis. This has a major impact on the way in which we work and the way in which our sectors develop - these comparative pictures. One of the most valuable things I find in my own work as a university vice-chancellor is visiting other institutions, both in our country and overseas, and hearing in a practical way about the way in which people are going about doing things. This heuristic, as we say, comparison, short of a formal benchmarking, is actually of enormous value if you're building policy, you're building structures, you're building strategic directions for institutions.

I think already I can see in the discussions that we're going to have there will be a lot of very interesting comparisons, and the one about the size of the council and the dynamics of the council and what we're doing with our councils and senates is something I think we'll all benefit from. I must say, just as an aside, we recently at the University of Western Australia changed the

nature of the council, and one or two members wanted the council to be bigger. We had 35 more or less in the room, and we felt this was a bit much and we should come down, but there was another model around which said, "We'll become more efficient if we were double the size," and I'm just so grateful that they hadn't visited Taiwan! It would have scarpered me completely. But we'll get to grips with these matters along the way.

I wanted to say three personal things at the beginning. One is the enormous sense in which we're all involved in a clear commitment to the empowerment of education at this time, and many of us benefited from that. I was a scholarship boy from a bush town and I know the effect which education had on those of us who could go on and those who didn't. That's an enormously important part in all these discussions about directions, quality, et cetera. That is the key factor of ensuring that education has the widest possible availability for our societies at this time, and getting that right is the great investment for the future, not only in technical and economic terms but I think in cultural terms. Since 11 September none of us can doubt that we need more education and more understanding in this world.

Another one that I just put in for my own experience is the question of diversity. I have had the good fortune to work at five Australian universities, and each of them has been very different - from the very oldest in 1851 to one of the newest in 1989 - and in all of them there's an important sense of significant missions there and we must make sure that that diversity is preserved and enhanced.

The next thing that really stands out in my sense of a professional career is the enormous change that has gone on in our universities from the time when I was a young head of department when the Dawkins White Paper came out - the 87-88 papers - through to changes in the development of the Australian Research Council and then major developments and reports since then. We have seen this extraordinary series of changes, and five of them really have stood out in a dramatic way. One is the fact of participation, as Dr Shergold mentioned. There are over 700,000 students in our system of funded places. When I was a young professor there were just on 200,000 and it really was a very elite system. University was for toffs, and that's not what it's about any more.

Research has also come along massively. We're now under a great strain to do research, but the research culture at our campuses has massively changed. There have been very significant new and, I think, very positive ways in which we are working with industry in the community. We have diversified funding remarkably, and it's a sort of secret silent revolution that's gone on in our universities as we have become more hybrid in the way we operate. Yes, there are problems out of it, but it has also brought new immediacy of questions and issues and vitality to our sector. Many of the universities in terms of block funding are down now to about a third of their money directly coming from government. Quite a lot of us are on about 30, 31, 32 per cent. That's another of the extraordinary changes.

Then there is internationalisation, which now has been given an idiom and a phrase, which certainly I can remember when I was once a chair of an academic board and it was suggested we wrote something for the academic board on internationalisation. There was a great scratching of heads around the table as to what we would write down - "What shall we do? What is the university actually doing with regard to internationalisation?" All those things have come in an enormous way, and the levels of expectation, the role and the challenge of the universities have grown and grown.

So we have, as the secretary of the department said this morning very well, universities in Australia at the crossroads and we are looking to the future now, where we need - to quote him again - "an integrated package of new policy proposals" which can allow universities to go forward from a quality base. I think we have excellent universities; I think we have a quality mass system; I think there's excellence in all of the universities in different ways. The great challenge is to bring that out and ensure that universities can perform to their missions at the best possible international level. That's the sort of challenge we look at now.

Within that, one of the key elements is, indeed, coming to grips with the matter to do with university governance. That's only one part of it, but it is a part that needs to be looked at because of the ways in which strategic developments are ultimately in the hands of an advising and managing executive, but has to be ratified, supported and propagated by the trustees of the universities. That's where governance comes in as an enormously important role for development and change.

The federal government has therefore announced that there will be review - with a small "r" - a review process, and governance will be part of that review that will go on this year. Looks like we just go to the next one, thank you. I won't go on with any more about why the challenges need to be taken up and we need to look at the operation of all the integral parts of our sector, but I do think we might say three things around the theme of governance. One is to say a few words about policy development since the eighties and the effect which these have had on our governing bodies; another, a little bit on the role, responsibilities, composition, performance of the governing bodies; then some questions of new developments and challenges.

This will be an overview. It will be a kind of helicopter view of it all because I know that in Adelaide, too, down the road, down the corridor, this is going to be one of the big themes for the break-out groups and there are going to be presentations of a far more detailed kind and opportunities to interact in a far more integrated way. So I will keep at that more general level and I'll leave it to my colleagues Prof Smith and Prof Niland who will tackle the topic in a far more detailed way.

Let me say first then a little bit about governing bodies, and I suppose I should immediately get to grips with some basics as to what we're talking about.

David raised the question of, "Are these comparable bodies?" and I think that's a really interesting matter. What we have here is that universities are established under state or territory legislation and one, ANU - Australian National University - under Commonwealth legislation and, under these acts, responsibility for governance and management of the university is vested in the governing body.

An important little text behind that is, of course, that while the universities are funded at a federal level and Minister Nelson is the federal minister, the universities are actually established under the states, and this reflects an interesting quirk of Australian history - how the universities began in the states because our nation began as separate settlements, separate states. We heard this morning about why South Australia was different. We're all different actually, and every one of them has its own history, coming together in a federation, and over time the Commonwealth has taken up a number of the responsibilities which were originally embedded in the states, and one of them is higher education. That's a little quirk in Australia. We are established under state acts but we are funded federally. That has some interesting consequences.

This is what we mean. This is following up the definitional matter that was raised earlier. Governing bodies of universities take the form - the names vary, so don't be confused about that; they either call them councils, senates, board of trustees, indeed I think in one case still a board of governors. There are a number of names but they play the same kind of role in the Australian system, and one of the key aspects of it is that this is the body which appoints the vice-chancellor and increasingly the vice-chancellor is seen as the CEO with the delegated responsibilities for managing and leading the university.

The chair kindly introduced me and said I was the 16th vice-chancellor. I think until about the number 11 or 12 at our university the vice-chancellors were part-time. There was an inquiry into the university during the Second World War and the reviewer said, "I think it's time we actually had a full-time vice-chancellor. The work is growing." It has not always been the case that from the beginning there was a simple idea of this, because in many cases the first universities that were established were really run by the council and, indeed, the chancellor played an absolutely critical role. The senior professor was often this part-time vice-chancellor. Eventually they became the CEO and it's quite normative now; quite a lot of our vice-chancellors are also referred to now as the president and the model is much closer to an American president.

Before 1988 the governing bodies were quite large. I don't think we can ever get up over 100 - certainly not 200 or 300 - but it was not unusual to have governing bodies that were in the 30s and the 40s. That reflected the way in which the early universities had been established. Australia's first university was 1851, the University of Sydney, and then each one of the states as we developed as separate communities, each state as part of its growth in fact established a university as a key element. There were six states, and by 1914, the Great War, we had the six foundation universities, the six sandstone original universities, and the last one before that was 1911 which is my

university.

But in between that we had Melbourne, Adelaide, Queensland, Tasmania, WA. So you filled it in. The people who had been involved in the formation of the universities didn't come out of a national plan because there was no nation. We were then separate colonies at different stages of development within something called the British Empire, so the universities reflected their local communities. In most cases, if we look into the history of how they were made, leaders of the community got together, lobbied government; all were parliamentarians and lobbied for money or raised money and created these very small little institutions with only a couple of hundred students, which were the original universities.

So you can see the range of stakeholders you would get: certainly not in the early stages academic and general staff members, but students, members of convocations, parliamentarians, ministerial appointees, convocation being the former graduates of the university. From the First World War onwards that shape increasingly developed, but one of the key features of the earlier senate was it tended to reflect internal stakeholders rather than the external, and that's been one of the developments in more recent times. Laurie will put another one on.

Then we came to the big changes in higher education in Australia at the end of the eighties and we had a new reforming minister, a government that was looking at all the major sectors of the country - industry areas, social areas, and so on - and higher education very much became a focus from 85-86 onwards. We got a green paper in 87 and a white paper in 88, and there are some people in this room who actually helped write that and then it finally appeared under the name of Minister Dawkins. So there was a tension played, a whole range of the ways in which the sector was to grow, and governing bodies certainly got the spotlight. They were to operate more effectively when their roles and responsibilities were more clearly defined; universities were now being charged with a kind of social and economic mission, tying in with a new national sense of direction in Australia.

It criticised the size and the representative aspect of the governing bodies, seeing them off when there was a streamlining of impediments to a more efficient corporate sense of development in the university, and they certainly emphasised an ongoing issue which was to do the overriding responsibility of the members of councils, senates or trustees to act in the best corporate interests of the institution and not merely be there as representatives of the various sectional groups that might have elected them, nominated them, or from whom they had actually been appointed.

In 1995, because the issue endured - this was raised in the white paper - there were some changes, but there was clearly a strain increasingly growing between the performance of institutions, their goals and the character of the governing bodies, and David Hoare - a very distinguished leader of the Australian business community - did a very subtle report. He talked to leaders

of the community, he talked to industry, and he wrote a very interesting report - which still deserves looking at - in 1995 which suggested various ways in which one could enhance and develop governance in the universities; improvements in governance arrangements, a more corporate focus - "corporate" here meaning institutional, whole-of-institutional focus.

He wasn't saying in a crass way that they were to become a corporation as such. I think people sometimes misunderstood that. He pointed out that the senates or the councils really do have to assume ultimate responsibility for the strategic direction of the university, and that's a great issue which endures now. The most important thing, I feel as a university leader, is ensuring that my university is aligned with the major movements in education, social needs, and intellectual and international developments - those strategic developments which involve the resourcing and the partnerships, the alliances. That's a critical role for the senate to play, and the council, advised and supported by the executive.

What can happen - and it, alas, does happen - is that it's always easier to talk about issues to do with parking or issues to do with the airconditioning or a specific problem in a particular faculty when there has been a good lobby, a set of letters, or in my case a certain tree fell down. It was a key point that took several meetings as we sorted out what we should do, because the tree had been there for many hundred years, and it suddenly changed the look of the campus. So did we have another tree or did we re-align or chop the tree down next door? There are more amenable issues to get into than worrying about the strategic direction, and I think there's sometimes a temptation on councils and senates that I'm sure they resist, but sometimes they just weaken a moment and they divert into the bicycle shed issue. In fact, we have actually had the bicycle shed issue, because of the colour of the shed. So that has happened.

But the strategic direction is what we're supposed to be about, and that challenge to build that culture is really rather crucial. There was certainly in the Hoare report an argument that councils should be smaller, averaging then in the mid-20s. David Hoare thought that between 10 and 15 would still capture the different stakeholders and make it more focused and more corporate in capacity. Since that the debate has gone off. This is a live issue on so many of our campuses as the institutions evolve and as we evolve within our own states, and there have been a number of reform initiatives. The states of Victoria and South Australia have amended university establishment acts in fact to reduce the size of the bodies in a uniform way.

Some of us who have been involved in individual reform have benefited. I should immediately speak up for South Australia and say that in the reforms that I have been involved in in changing legislation, the South Australian document was enormously helpful to have, and it was very helpful in making the case. This restricted categories of representation, with a stronger emphasis on externals and, in particular, on business experience. You could make a long list here. Individual universities have moved to reform or change or amend their acts or rewrite the whole act for a range of reasons, and each time that has

come up it's been important to be able to take account of the experience around the sector.

There was one case where in a university that I was involved in it was really necessary to rewrite the whole act because we constituted the university in a new way and it was enormously valuable to look over all the other acts. We had all of them in front of us, plus the Hoare report - in fact, David Hoare came to give talks at the university while we were doing it. We looked at the South Australian documents. I talked to other colleagues. We looked at some experience overseas. So it was not done in a vacuum, and we thought very hard about what was the most efficacious way in which we could redraft the act. Then it still had to fit within reasonable consanguinity with other acts in the state.

Here's the question then of, "Behind it all, what are we trying to get at when we're working at doing these kinds of reforms?" Well, the Higher Education Management Review, the David Hoare review of 1995, argued that here were three key elements: the strategic development he put right up at the top, and the development and enhancement of the institution in a resourcing way; external and internal accountabilities. The more we diversify that funding, the more we need to have accountable frameworks, the more we need to be able to address an issue which the minister has raised, and Prof Chen raised, which is: how do we get that balance between being responsible as public institutions - over \$6 billion is put into Australian higher education. How do the taxpayers know what is going on and is it accountable?

At the same time, how do we ensure that those accountabilities are not so enormously burdensome and costly that they wear our system down. We're hoping in the review that one of the things that will happen is a streamlining of that process. Then there's the monitoring and review of performance. I think it's extremely important that we be able in terms of outcomes to inform the trustees about the progress and development of the institution. I'm one who believes very firmly in having an operational plan - whatever you call it - which sets targets - one year, three years, five years - and we work against those and accept the challenge of presenting that to the council or the senate to show the progress of the institution, and then we challenge them, and they can challenge us in terms of the directions we're setting, the priorities we're setting and the targets we're setting.

It also allows you, within your own university, to build a culture of performance, because people know they're performing against something; not some vague notion of intellectual excellence, but what do we actually do next year or the year after. When the quality agency gets going - and it is in our country this year - those reports will be really important for the debate within the university, and I trust they'll also be taken very seriously on councils and senates as we look at ways in which we work against mission.

The Audit Office of New South Wales has more recently added some interesting ones which are ensuring compliance with statutory compliance and

areas to do with managing risk, because as we diversify resourcing and we become more closely aligned with private sector funding and international funding and a whole range of resource agencies in research, it is important that these areas be looked at, be monitored most closely. I think many of us in the last three or four years have become very interested in the whole professional question of risk - what does it actually mean; unpack that - because that becomes vital in the fact that we do need to take risks in universities if we are going to build IP but at the same time they need to be done absolutely within accountable frameworks so that we're conscious of when we invest in the IP and we put money in it, which may well lead to major developments, we're aware of how risk is calculated and embedded. That's all part of that process.

To come back to where we were at the beginning then, and just begin to sum up: our governing bodies range from 13 at Bond University - so that would come closer to David Hoare's model - to 35 at the University of Queensland, and that's one of the original state-founding universities. 27 of us - 71 per cent of the universities - have governing bodies now between 20 and 25. If you go to advise a university or talk, that's normally the size you find. Overall, governing bodies, I think it would be fair to say, have been getting smaller over the last decade. The average membership has fallen from 27 to the current 21.

What we don't show here and there isn't time to do it, but I'll just sketch it here, is the changing character of that membership itself. It's not just numbers - that it seems to me important that one reduces it from 35 to 2 - it's a question of who sits round the table and how well do they operate. There's an increasing debate and concern over how do we balance internal and external members. There's a question of continuity and the turnover in membership. We recently rewrote much of the act of my own university, and one of the fiercest debates was over this question of continuity and turnover. How long is a reasonable term for a council member? Is it three years? Is it five years? Should people be allowed to be renewed? That was the kind of issue.

There was one wonderful speech from one of our senators that I love sharing with you. He pointed out that he had actually been on the senate 27 years and he thought that between 25 and 30 years wasn't a bad initial term. That was a good kick-off point. I appreciated that. We settled for four and four. Then there's the question of the optimisation of skills and experience; the question of who should really sit round the table, given the nature of your institution.

That's so important because each of our universities is very different. We have different communities around us, and so it's absolutely critical that you have the right people there who both understand, will support, and even advance the interests of the university. So it's critical who sits round the table. Then there's the question of balance; stakeholder representation and expertise comes in. Again, if you're looking at categories - and we're not seeing this as a private body running like a private company, where the only issue is business expertise; here we do need the representational issues.

To those who said in my series of reform experiences - some who said, well,

they thought a council of about four or five would be more than enough - I did have to point out that would leave out quite a lot of the representation that does need to be there. We do need to have the voice of our academic staff; they are our preferred shareholders. We do need our students to be there; we do need our professional staff; we do need people from the community. The government has a right to have a say there. Equally, we do need to have representation where there are specialist skills needed. Maybe we need somebody who has an overseas experience or actually comes from interstate or overseas. Those things are also important in building that balance.

How they get there is quite various around the system and if you look at the acts - and I think Prof Smith will be looking at that tomorrow - you will see in fact quite a variety. Members take their place around that table by appointment through state, territory and Commonwealth governments; sometimes the governing body itself is able to nominate, and that happens either through a small chancellor's committee or sometimes it's put out to nominations or election around the table; sometimes it's canvassed quite widely in the institution. There's election by the staff, both academic and general. Students have elections or they work through the student council or guild. Sometimes there's a division where the categories are for postgraduates and for undergraduates; convocation and alumni are there in many cases, particularly the old universities but not always in the new ones.

Then there are individuals who are placed there by the local parliament. How that happens is a little bit various, too. The experience is that in some instances the names that are put up by the university appear on the council; in other cases the government decides that that's just a list and it has its own priorities. So those that come and sit around the table are not always of your university's choosing. Then certainly there's always an ex officio capacity. By virtue of office, the vice-chancellor is there; the chair of the academic board usually. Some of the old universities didn't have that because the vice-chancellor was the chair of the board, and that's another interesting development. We don't have time here today, but many of our Australian universities would have an elected chair of the academic board and the vice-chancellor and other members of the executive would attend the board and make a representation, report and so on, but don't actually chair the board. So you have that sort of interesting shift.

One of the reforms we did make in my own place was to formalise the presence of the chair of the academic board. The chair could attend but could not vote, which is a little unusual. It had survived since 1911 but it was becoming important that we did something about that, so we moved to that. The meetings are chaired by the chancellor and people become chancellors by different modes: whether they are elected entirely from members within the council - there are some that have that; others appear as elected by a collegial system where they go off to look at names and nominations; and others are appointed again in consultation with government. So there's a range of ways in which the chancellor gets there.

We're not going to say much about chancellors today, but my own working experience is that the chancellor is extraordinarily important in this whole story because I think the chair of the meetings - given that it's not the vice-chancellor in Australia; I don't think there's any council that has a - because they are boards of trustees and vice-chancellors are CEOs - the chancellor representing the community is the chair, and that's a very important role in both guiding agendas but also more particularly guiding the working of the meetings themselves.

On performance, this is another really big challenge that's going on in our sector. Not all the councils and senates are, in fact, at the same point in this little story, but it is significant that many many now are beginning periodically to review the structure and performance of their governing bodies, either with a self-assessment - many of us now have a process where we invite the senators, in my case, or councillors to set their goals for the year, and they are tested at the end of year how well that has gone. Some of us have a questionnaire that deals with every meeting - how well the meeting went, how the items were handled; the performance of all those who made representations and speeches. That is all collected up, and this is to really enforce the idea that this is a place of business and not just one of representation.

A number of the university councils, you will find, would have a weekend retreat. Many of us will go away with our council before the year and talk about where we're at and where we're going. Many would have a review at the end of the year, where we'd look over what has happened in the work of the university. A number of us would have specific one-day free-form discussions where we take a big issue that has to be dealt with and, rather than simply put in as a single item in, say, a two or three-hour meeting, we spend the whole day talking with the council, or we bring in outsiders so that we get their sense of participation and their knowledge level, to the point where they can make the kinds of ultimate decisions which are critical for the future of the universities.

They meet - and there's a great variety here - I said at least six times a year, and I'm sure many of my colleagues will immediately shake their heads and say, "No, we meet three or four times," and others will say, "We meet every month." There is variety in how often the councils meet. There's also variety in the length of meetings and when the meetings are held. Some hold meetings at 8 or 9 o'clock in the morning - I know of one; others have them that run to lunch; others late afternoon, and some have evening meetings. The dynamics of the meetings are interestingly different, if you happen to attend them - the mood and the style and culture is quite strikingly different.

It's very important in the story, too, that we move from just the formalities to how it actually operates. We have put there that for effective governance and management there need to be very good relationships between that council with the vice-chancellor and other members of the executive, the peak academic body - and that's what we referred to earlier; there is an academic board or council in the university, and that's very important; making sure that their work on the academic processes is properly heard and properly supported

- and then many many of our councils, I think all of them, would have working subcommittees.

That becomes a very important feature of how the actual big council works. They don't just work off an agenda which is presented there. Most of us would have a finance committee, most of us would have committees that dealt with, say, capital works or auditing risk, quality assessment - there's a whole range - external policies, et cetera. Those committees are absolutely critical for both the agendas and the functionality of what they bring; also quite a number of them co-opt members of the community, so when you talk about the 21 on the council, quite often there's a case of other experts from the community who are working on those subcommittees and giving advice and feeding that up to the council.

This is a story that's yet to go on. We have just had a review of the funding of higher education and policy directions by the senate, and within that document which came out last year - a rather contested report, where one can somewhat tell who wrote which part of it and, we might say, which political party they belong to - there was certainly embedded the notion of the importance of our public universities meeting higher education needs by looking at the ways in which certain key areas of development are taking place, in particular commercial practices and questions of accountability for commercial arms; and joint ventures were raised, with the spotlight really falling on the councils as to how well they're in fact managing that.

State governments have taken a considerable interest in this as well. New South Wales and Victoria have in fact instituted their own inquiries into corporate governance, looking at this process of the changes. Auditors-general in New South Wales and Victoria are now very much getting into the act and the debate. New South Wales has amended acts in regard to this and, I would say, generally auditors-general are beginning to be more and more interested on a state level in the operation of universities and budget diversification.

We said at the end that this is an issue that is with us for as long as there's change and, given that the universities are in a tremendous phase of transformation, we can expect this to be a key feature of the part of change. I would conclude by saying there are three things that we will need to look at in that process of change. One will be the question of the structures, which is the actual legislation and the responsibilities of the councils or the senates, and that will include questions of size and so on. That will become a major debate, because the challenge to the universities to build themselves, to grow themselves, to fulfil their missions, makes it all the more responsible role for not just the executive but for the senates to actually carry out the mission of the institution. So I think in that formal side we can see more and more debate on it.

But there's also what we might call the soft structure side, which is just as important, which is building the cultures. It's to do with who we put on these councils, who we invite to be on them, and what role they have, what training

they have, what preparation, what skills they bring, and are they the appropriate balance. So the membership by individuals is very important. The appointment of the chancellor, and in some cases a pro-chancellor, is also very important for leading the process of cultural change.

Lastly, there is the fundamental one - and it applies to all institutions, not just universities but any corporate body - which is, what is the nature of the culture which you have been able to create in that organisation? You can manage to make almost anything fly, it seems to me, if you have enough cultural energy behind it. I think you can make all manner of institutions work well without necessarily having some perfect modular senate, but the key thing with council - the key thing - is having a sense of what is the council about. If you can embed that sense of strategic direction, the sense of the responsibility for the enhancement and development of the university, and a sense of absolute commitment to the institution at large, then you're going to go a long way to meeting the questions which might be raised by the structure, but also the issues which come at the council.

Without the two put together, we will not have really vibrant and successful governing bodies, and certainly we won't have vibrant institutions. It's quite possible that we could have at the end of the process some quite different looking councils, but not necessarily on a single model, and I think that won't be any bad thing at all - that institutions will be able to build what they need to support their mission to operate in the ways which most of all represents the kind of place they are and the sorts of ambitions and service aspects that they have. So it's structure, but it's also building the culture, and of the two I think building the culture is the more difficult.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月8日（星期一）

主題演講

大學管理的新發展

演講者

西澳大學校長兼

澳洲大學校長委員會會長

DERYCK SCHREUDER 教授

次長、各位與會代表、各位校長、澳洲大學校長委員會的前後任會長和委員們、《校園評論》(Campus Review)的編輯先生、各位朋友、在場教育界的先進，高教界的資深前輩：

非常高興能夠在此代表澳洲大學校長委員會對整個教育系統的遠景發表談話。我所要報告的並沒有什麼高潮迭起的事情，譬如一個有三百〇五位代表的校務會議。我只有平淡的報告。但我非常高興能向各位報告目前澳洲大學管理的現況。

我必須先表示歉意，我所準備的投影片有些上面可能會有不正常的設計。我要感謝陳維昭教授先做導言，讓我有時間將PowerPoint的簡報資料轉換成投影片。各位在看的時候，可能會覺得有些奇怪，我想那是因為投影片本身的顏色。這得歸功於澳洲大學校長委員的Laurie Fisher先生以及辦公室的其他同仁。他們用心地將我的PowerPoint簡報資料轉換成投影片。假設我們是用PowerPoint做報告，所以各位只要把顏色對上去就可以了。

我真的很感謝Peter Shergold次長，替我們安排特別好的天氣。本來我就想說，來這裡開會真好，最好是配上西澳的好天氣。現在我可以加上一句話，如果酒不夠的話，一定要讓我知道，因為我們西澳有瑪格麗特河。我們可以提供最棒的葡萄酒，我不希望大家開會因為缺酒而掃興。

我想今天早上的討論以及上一場次的演講中，大家透過小組討論，互相切磋，一定有所助益。其中一個觀念是學習挑戰。我們的小組也討論另一重要的觀念，那就是建立聯結管道的挑戰，這也是我所要講的重點。

以國際性的觀點來討論這些事情時會發現一些有趣的地方。這些比較性的圖表對我們自己部門在發展工作的方式有很大的影響。在我自己擔任大學校長時，我發現參考其它院校最有幫助。不論是國內或國外，能實際體會他人處事的方式最有益處。這種無固定標準的啟發式比較，在我們制定政策、建立組織架構、或建立學校策略指導原則時，會有珍貴的助益。

我已經可以想見在即將進行的討論中，會有很多有趣的比較案例出現，而我們可以從關於董事會規模、運作及董事會和理事會事務方面所做的比較獲益不少。最近西澳大學的董事會做了一些性質上的改變，有一或二個委員希望董事會規模能擴充得更大。目前我們有三十五位委員左右，而我們已經覺得好像有點太多，必須加以縮減，但有另一個觀點則說：「我們若在規模上增加兩倍，我們會更有效率。」還好這些人沒有去過台灣！我們稍後再進一步討論這個議題。

首先，我想講三個我自己的經驗。其中之一是對教育功能的清楚認識及其優點。我是來自一個小鎮的獎學金生，我清楚地知道受教育與否的差別，在座的諸

位多數是有機會受教育的受益者。此點對於教育的方向、品質等等的討論是非常重要的，且是確保我們社會提供普及化教育機會的關鍵因素。教育機會均等是對未來最大的投資，不僅對科技及經濟而言，我想在文化上更是如此。九一一事件後，沒有人會懷疑我們需要更多的教育以及對世界更多的理解。

另一個與我個人經驗有關的議題是多元化。我有幸曾在澳洲五所大學工作過，從1851年建校，歷史最為悠久的大學，到1989年建校的新大學。儘管每一所大學的校風不同，然而沒有一所大學對多元化不抱持相當重要的使命感，而且都確保多元性的存在，並加以發揚光大。

就我職業生涯而言，另一件突出的事情是大學所經歷的巨大改變。當年的教育部長Dawkins在1987和1988年出版綠皮書和白皮書時，我是個年輕的系主任。自從那時候的變化一直到澳洲研究委員會的一些改變，以及日後的重大發展。其中有五項發展特別引人注目，其中之一是就學率。就如同 Shergold 次長所提到的，我們目前有超過 700,000 個大學生。當我還是一位年輕的教授時，那時只有大約 200,000 個大學生。當時的大學算是相當菁英化，是給少數菁英分子讀的，而現在情況已經大不相同了。

大量的研究工作也隨之而來。目前從事研究是一種不可避免的趨勢，同時做研究的文化在校園中也產生巨大的變化，其中之一是建教合作，這是我個人認為正向改變的。當今的大學正積極地與企業或社區進行許多新的合作計畫，研究經費也因來源多元性而有顯著的增加。這是一種學園內秘密的無聲革命，當然也為學校帶來一些急迫性的新問題，使得學校的運作更趨於複雜化。政府的撥款補助佔許多大學總經費的比例因而下降，大約是三分之一。一般而言，佔百分之30, 31, 或32左右，這是另一個不尋常的變化。

另一項改變就是國際化。如今這個名詞幾乎成為金句箴言了。我還記得從前我擔任某一大學的學術委員會主席時，有人提議委員會應做些關於國際化的報告。席中很多人還不是很清楚到底該寫些什麼：「我們該做些什麼？大學應如何面對國際化的議題？」類似的疑問不斷被提出，對大學扮演角色的期待及面對的挑戰也不斷增加。

所以就像教育部次長今天早上所說的，澳洲的大學正走到十字路口，而我們正展望著未來。我再次引用他的話，「一個整合的新政策芻議系列」可使大學在品質的基礎上繼續前進。我們擁有一流的大學，我們擁有高品質的普及教育系統，我認為這些優越性以不同的方式存在於各大學中。而最大的挑戰是如何將這些優點顯現出來，並確保大學能將這些優點表現在國際層次上，這就是我們現在所面對的一個挑戰。

大學行政管理也是個重要的議題。雖然它只是管理的一部份，但卻值得特別

討論，因為策略性的發展雖然是由校務管理執行者管理，但卻必須先經由董事會批准、支持和宣導。這也就是為什麼大學管理在發展和改變中會扮演如此重要角色的原因。

聯邦政府因此宣佈將採行一個新的監管制度，只是個審查程序，行政管理將會是今年進行的這個審查制度的一部份，請放下一張，謝謝。我不想繼續闡述關於整體性運作所面臨的挑戰，但我想對行政管理這個主題說明三件議題，第一是關於自從八〇年代以來政策發展的效應如何影響我們的管理組織；第二是關於管理組織的責任、組成和運作表現及其所扮演的角色，最後是關於發展的問題及所面臨的挑戰。

我會對此做一個概述，只是一個縱觀性的總結，因為我知道這個議題將在阿得雷德的各大學角落廣為討論，這個主題會經常性地被校內不同的討論小組提出，眾人以互動方式仔細討論將讓真理更鮮明化。所以我在此僅做一般性概述，Smith 教授和 Niland 教授會對此主題做更詳盡的討論。

首先我想先說說管理組織的事，一些基本的議題得先釐清，David Hoare 提出了一個問題：「拿這些管理組織做齊頭性的比較可行嗎？」我們的大學是建立在各州法源上，只有澳州國家大學是建立於聯邦法源的，因此，大學管理和經營的責任是由各州制定的。

雖然大學的經費是由聯邦政府撥款的，而儘管聯邦政府的教育部長是 Nelson 醫生，他卻對各大學無直屬管轄權，因為大學實際上是歸各州政府管轄的，此點反映出澳州一個有趣的歷史，這個國家是由不同區域建立各州，進而聯合組成聯邦政府。今天早上我們聽到了為什麼南澳的情況是不一樣的原因。實際上各州都是不同的，各有各的歷史，到後來才整合成一個聯邦，而聯邦政府逐漸承擔了原屬州政府的責任，其中之一就是高等教育。我們是在州政府的法案下成立，卻由聯邦政府撥款補助，這造成一些有趣的結果。

這就是我所要強調的，之前我曾提到這些名稱定義的問題，儘管大學的管理組織名稱各有不同，有稱為校董會、董事會或理事會，他們實際上所指的是同樣的功能形式，都是大學的管理機構，因此請不要被這些不同的稱呼搞昏了。董事會在澳洲教育體系下有很多不同的名稱，但同樣扮演著一個重要的角色，那就是委派校長和賦予校長類似執行長管理經營學校的責任。

主席親切地介紹我並說我是第十六屆的校長。我記得本校第十一或十二屆時的校長還只是兼職性質的。因為工作量持續增加，於是在二次大戰期間有人對學校提出了：「該是有一個全職的校長的時候了」的要求。一開始提出時這原本就不是一個簡單的構想，因為在早期多數大學是由董事會建立及管理的，而確實，當時的校長扮演了非常重要的角色，當時的校長通常是由資深教授兼任的。後來

校長逐漸接下執行長的角色，有許多校長也被視為董事長，這種模式很像美式總裁的角色。

在1988年以前管理組織規模數目非常多，我想是沒有超過100，絕對沒有200或300之多，但應有三、四十左右吧，這反映出早期大學是如何建校的。澳洲的第一所大學—雪梨大學是建立於1851年，然後各州都各自建立了一所大學，當時成立州立大學是被視為該州發展的指標之一。我們有六個州，在1914的第一次大戰之前，成立了六個州立大學，其中最晚成立的就是本校，是於1911年建立的。其他各州的大學分別是墨爾本，阿得雷德，昆士蘭，塔斯馬尼亞，西澳。

當時建校並沒有一個全國統一的建校準則可遵循，因為那時國家根本還沒成立，那時各地區是分別隸屬於所謂大英帝國的殖民地，各自發展程度是不同的。所以在細查各校的建校歷史時會發現，原始建校是由地方領袖們齊聚一堂，對政府進行遊說，然後透過董事會支持向政府籌募資金，然後創立了一些小型的，只有幾百個學生的學院，這就是早期大學的前身。

因此可以看出大學組織成員有多麼廣泛了，除了早期建校的教職員，還有學生團體、校務會、州議會、內閣閣員代表、及畢業生代表等。第一次世界大戰開始後大學組織又逐漸發展，早期校內勢力重於校外來的影響，近來的演變發展也是這樣的趨勢。（Laurie，請放下一張。）

八〇年代末期澳洲高等教育又面臨重大變革，當時有新的改革派部長，政府將高教的未來放遠至其他領域，包括企業界及社會層面等等，高等教育在 85和86年間成為施政重點。在 Dawkins 部長主政時期，有了87年綠皮書及88年白皮書的發表，在座許多人都曾親身參與這兩份政策書的準備。當時改革的聲浪不斷，眾人的目光都擺在各部門的發展走向，大學管理組織更是焦點所在，大學被賦予了社會和經濟上的責任，必須配合澳洲新的國家發展方向，更有效率的運作。

有一些批評的聲浪認為如此龐大的管理組織會對大學有效運作造成阻礙，於是強調不管董事會的成員是來自州議會或理事會，董事會的宗旨以大學的利益為優先，應視大學的未來發展為前提，而不僅僅是些俱有投票權，僅是選舉、提名或指派的代表而已，這些是無可旁貸的責任。

白皮書裡頭提到的這項議題，持續對大學的校務運作、校旨及管理組織產生影響。在1995年，一位澳洲知名企業領袖 David Hoare 對此作了一個非常詳盡的報告。他綜合了社會團體及企業界的意見，發表了一個非常有趣的報告，雖然是1995年的發表，至今仍然值得參考。他對如何加強和發展大學管理經營做了很多的建議，包括在管理安排上的改進，應該有一個更整體性的、以企業經營的角度來發展。

有些人會誤解說他認為大學應像企業般經營，其實並非如此。他認為董事會應對大學的策略性方向負起最終責任，這也是目前普遍爭論的議題。我認為做為大學領導者最重要的責任，不管是透過策略聯盟、建教合作或任何資源整合，應確保大學發展能符合教育宗旨、社會需要及國際發展。這是董事會應扮演的角色，而做為執行事務的校務會必須遵行並支持。

對已經擁有很好的辦公大廳的教職員來說，當然關於停車、空調和其它方面的問題總是比較容易解決，甚至連一棵樹倒下了也是一個重要的問題，為此我們得開一連串的會議來討論如何解決這棵已有百年歷史的校樹，因為它倒下後影響了校園的景觀，所以得開會討論是否再買另一棵樹或把原樹扶正，還是乾脆把隔壁的樹也砍下來？董事會除了策略方針問題外，實在還有太多其它比策略發展更惱人的議題，雖然董事會儘量不討論這類瑣碎的議題，但有時仍不免轉入像腳踏車棚之類的討論上。腳踏車棚的問題確實拿出來討論過，當時講的是車棚顏色問題，這是實際發生過的狀況。

其實我們的任務應該在討論策略方向的議題，建立這樣的校園文化是非常重要的挑戰。Hoare 的主張就是董事會規模應該減小，平均應在二十五左右，David Hoare 認為維持一個 10 到 15 人的規模就可以囊括所有重要的決策者，而且可集中焦點並在功能上更具有整體性。當然他這樣的說法引發不少爭議，各州許多鼓勵的做法不斷引發校園改革，這是各校園內一個活躍的議題。維多利亞和南澳已修正大學建校法，以期能以統一的方式縮小管理組織的規模。

我們之中曾經參與改革的許多人從中獲益不少，我必須先為南澳說一些話，在我參與的法案改革中，南澳的資料非常有幫助，也是個很好的例子。這些多數是外界來的代表們，多數俱有商務背景，同質性高但名單卻是一大串。每所學校基於不同的理由來做改革或修訂法案或乾脆把法案整個重寫，而每一次的修正都必須把該領域的經驗加入。

我曾遇過一個將大學法案全部重寫的案例，因為該校是以一個全新的方式建校，因此詳細檢視所有相關法案是相當重要的。當時我們將所有的法案拿出討論，還有 Hoare 的報告也一并討論，事實上 David Hoare 當時曾有來過我們學校演講。我們參考了南澳的資料，我也與其它的同事討論，也參閱了一些海外的經驗，所以並不是憑空做出來的，我們很努力的思考如何才能以最有效的方式來重新改寫出新的法案，而且必須合理的符合州內其它有相關的法案。

當在做這一切改革時，我們究竟想從中獲得什麼？David Hoare 在 1995 年時所做高等教育管理研究報告中，主張三個關鍵元素：最上層是策略性發展，然後是在資源上加強和發展學院組織，最後是外在和內部的權責議題。資金來源越多樣化，就越需有個權責分明的系統，正如陳教授所提出的問題，一所拿公帑的公立大學應負起該有的社會責任；也正如部長要求的，澳洲一年花在高等教育的經

費超過六十億元，納稅人有權知道我們在做什麼而且沒有浪費公帑。

我們同時得確認這些責任不至於太過沉重且耗費過大，以免拖垮整個系統。我們希望的有一套有效的系統，讓計畫能按部就班執行，而且有一個監督和審查執行狀況的程序。我想向董事會報告學校發展和執行成果是非常重要的，我堅信要有一個有目標的計畫，不管你怎麼稱呼它，一個有目標的計畫，不管計畫是一年、三年、或五年，反正是一個能實際執行的目標，然後依據該目標去努力，並向董事會報告執行成果，他們也針對我們設定的方向、優先順序和既定的目標來審核我們。

這樣大學就能建立一個績效文化，因為這樣為一個可執行的目標而努力，而不是像為了所謂學術優越這樣模糊的概念而工作，而是在下一年度或在下一年中我們實際要做什麼。當品質監督機構來校審查時，今年就開始實施這個制度了，這樣的報告對大學是非常重要的，我也相信這樣的報告對董事會在審查成果時，也是極重要的參考指數。

新南威爾斯的審計廳最近在大學風險管理上增加了一些新的要求，因為當經費的來源越來越多元樣，且私人經費贊助及國際和研究機構資金不斷增加時，這些經費的管理更需密切監督。我想我們之中許多人在最近三或四年中對整體專業風險問題都變得越來越有興趣，到底它實際上的意義究竟是什麼？因為學校體會到智慧財產權的建立越來越重要，其中當然有連帶的風險承擔，我們必須認知到當我們投入金錢在智慧財產權的投資時，相關的發展及變數為何，而且也要知道如何計算風險，當然這些都只是部份的程序。

回到我們最開始所講的，並做一個總結。各校董事會的委員人數有多有少，從比較接近 David Hoare 所提的數目——邦德大學的 13 人，到最原始州政府建校的昆士蘭大學的 35 人，其中有 27 所大學，大約是有 71% 的比例，董事會人數是介於 20 到 25 人之間，這是調查出來一般的規模。總體來說，董事會成員規模在過去十年中已變得越來越小，平均成員數已從 27 人降到 21 人。

我在此先預告一下另一個尚未提到的重點，那就是董事會委員屬性上的改變。董事會委員數目的改變只是量的變化，當然對我來說從 35 減少到 2 是很重要的變化，但更重要的是究竟董事會委員的成員應如何產生及運作。對如何平衡董事會委員校內外成員的組合一直引起許多人爭議和關心，我們最近重寫了許多關於本校的法案，其中最尖銳的爭論就是關於董事會委員資格如何續任和移交的問題。究竟委員任期多長才是合理任期？三年？五年？可以連任嗎？這的確是個未解的議題。

我們委員中有一位做了一個絕佳的講演我想和各位分享，他指出他擔任委員已經 27 年了，他認為首任期應該是 25 到 30 年，我想這也是一種觀點，但我們一

一般是定四年為一任期。再來是委員的背景專長和經驗的問題，到底是誰才有資格進入董事會，這得視各校的特質來決定。

因為各校所在背景環境不同，當然董事會的成員要求也不儘相同，有了解大學立場及背景的委員，才能支持且增進學校的利益，所以由誰擔任校務委員是非常重要的。再來就是平衡性的問題，委員的專才背景也是很要緊的，當然這不像是經營私人企業只要選具有商業背景的人任董事會即可，董事會必須有各類別具代表性的專家。

對於有些認為董事會成員只要四或五個就夠了的說法，我必須指出這樣將令董事會失去某些程度的代表性。我們需要有學術部門代表的聲音，他們代表教務重要的聲音；我們也需要有學生代表出席；我們也需要專業的教職員代表；我們也需要社區的代表；政府當然有權派代表表達立場；同樣的，我們也需要具備專業技巧的專家做代表；我們也許還需要有海外經驗或有跨州經驗的專家，這些對董事會的平衡性都相當重要。

每位委員加入董事會的背景原因是不同的，各校相關的董事會法案也各有不同，我想 Robert Smith 教授明天會對此做相關報告。有些校務委員是由州政府或聯邦政府指派的；有的是董事會本身提名的，可能是經過小組會議逕行提名和表決，或是校園內投票決定；另一種是經由教職員選舉產生的；當然也有學生選舉或經由學生會產生的。有些建校較久的大學還分研究生和在校生名額，還有校友會代表，但一些新校則不見得有這些代表。

當然也有一些人是經由地方議會的指派而進入董事會的，各地選派的方式也大異其趣。一般都是由大學將委員名單提報董事會，當然也有由政府參考名單來決定先後順序。所以董事會的成員並不全是由大學決定的，總會有幾位退職的官員在其中，校長和教務長則是當然董事會委員；有些建校較久的大學沒有校長和教務長之分，是由同一人兼任的，這又是另一個有趣的議題，可惜今天沒有時間詳細討論。澳洲有很多大學的教務長是透過選舉產生的，校長和其他單位的執行長會參加教務會議及報告等等，但他們並不兼任教務長，這是一項有趣的轉變。

本校做了一項關於董事會的改革，那就是教務長必須出席董事會，但不能投票。舊有制度從 1911 年實施至今，的確需要做些重要改變，於是我們將董事會該由董事會主席來主持。主席是由全體董事會投票產生，有的從各院所長選出，還有一些是由政府指派的，所以董事會主席有不同選出的方式。

我們今天不打算說太多有關董事會主席的事，但我個人的工作經驗是，董事會主席在整個系統中佔有非常重要的位置，因為他們是主導董事會的靈魂人物，而校長則是執行校務的執行長。所以董事會主席領導了社會對大學的期許，不僅主導校務方針，而且也主導校務會議的議程。

另一個我們所面臨的挑戰是辦學的成果，董事會的委員們不一定在每項校務議題上都能達成共識，但至少都同意對辦學成果應做定期性的評估，有的是自我評估的方式，有的是以目標評估。像有的董事會開完後有問卷調查，調查會議進行的好壞，議題是如何被處理的，及所有代表們演說的表現等。收集這些意見的目的是在讓董事會強化落實事務，而不是僅讓代表們開會的集會場所。

有一些大學的董事會有週末休會；也有的會有年度聚會，談談處境和所將要做的工作；許多人會在年終做一個回顧，檢視大學的校務；也有一些人有特定的自由討論日，可能花一整天的時間討論一個重要議題，而不是像一般討論提案安排 2 到 3 小時的會議時間簡單討論。有時是董事會委員的討論，也有時會邀請局外人仕提供專業知識，以便做一些對大學未來發展的重要決策。

類似這種會議每年至少舉行六次，我相信很多同事此時會搖頭說，「不，我們一年開會大約三到四次」，而其它的會說「我們每個月都開會」，當然各個董事會的場數不一定，會期長短也不一定。就我所知有一個會議是在早上 8 或 9 點鐘舉行，有的會開到中午，有的開到下午，還有一些是晚上開會的。董事會運作大異其趣，如果有機會參與開會的話，你將會對會議的氣氛、風格和文化的差異感到訝異。

如何從形式上的討論落實到實際運作也是十分重要的，一個有效的管理和經營，需要董事會成員和校長及其它執行部門人員及最高學術部門保持良好關係來配合，這也是我稍早所提的，校內應成立一個學術委員會或教務會，以確保學術工作上的努力得到適當的支持，我想許許多多的董事會，應該是全部吧，都有成立旗下的學術委員會或教務會。

由此可看出董事會的運作牽連甚廣，不只是開會針對既定議程做討論而已。許多董事會設有財政委員會，還有其他專職委員會處理例如硬體建設、風險評估、品質評估及對外政策等方面的事情。這些委員會對董事會議程和功能供獻頗多，有一大部分委員是來自校外的成員，所以當我們提到董事會委員有 21 位左右時，其實還不包括了校外參與其他專職委員會的專家對董事會的貢獻。

我們已對州議會在高等教育的資金和政策方向做了一個概論，去年就有一份具爭論性的報告出爐，多少看得出一些政黨的政策端倪；換句話說，政黨對高教政策的理念，特別是公立大學的未來發展已昭然若揭，大學在一些重點領域的發展，特別是研究商品化的落實及建教合作的可能性，在在都強調了董事會的重責大任。

州政府對此也極感興趣，新南威爾斯和維多利亞政府實際上已在研究共管的可行性，且正密切注意大學管理的演變。新南威爾斯和維多利亞已將法案送審，

事實上新南威爾斯州已經修法完成，我想各州政府都極欲修法，將大學的運作及預算審查列入正式法案當中。

最後我想強調大學管理的演變由來已久，目前正處於重大的轉型過程中，未來管理機制的演變更是可期。我想以演變過程的三個注意事項來做總結，其一將會是組織結構上的問題，包括了董事會或理事會職責的明文規定，例如議會成員的人數及規模等，這些將是立法討論的重點，因為大學面臨建校、擴校、還有發揚實踐校旨的挑戰，這不單是校務執行單位的責任，更是董事會責無旁貸的挑戰。

除了硬體結構外，當然還有軟體部份也是很重要的，那就是校園文化的建立。董事會委員的遴選與校園文化息息相關，他們所扮演的角色、所經歷的訓練、具有的技能背景、及董事會委員任命的平衡性等，還有董事會主席是否能凝聚各委員的向心力，所以主席長的選派也攸關校園文化的轉變。

最後，不管是大學或是任何機構，最基本的要點是了解組織的文化本質為何。在我看來，背後擁有足夠強大文化能量的機構，任何事務都可迎刃而解，即使沒有完美的董事會組織，校內事務仍可運作良好，但關鍵是要對董事會的角色有正確的了解。如果將這正確的概念運用於策略發展方向，以改善和發展學校為己任，即使有其他問題，組織結構上難免有瑕疵，大學管理運作的改革仍是一條可行的漫長道路。

沒有組織和文化兩者結合在一起，將不會有活躍和成功的管理組織，當然就不會有充滿活力的學校。很有可能經過這些改造過程後，各校董事會的模式各式各樣都有，不一定是統一模式的，我想這也不見得是件壞事。各校依各自所求建立所需，每所大學依校旨建構董事會所支持的運作方式來辦校，所以不單是組織結構上的議題，還有校園文化的議題，而兩者中我認為校園文化才是更具挑戰性的議題。

NEW DEVELOPMENT IN UNIVERSITY GOVERNANCE:

Wei-Jao Chen
National Taiwan University

ABSTRACT

During the period when the later Twentieth Century turns into the early Twenty-first Century, the paces of social changes seem to be getting faster than ever. Under the circumstances of these rapid changes, a university that cannot accommodate itself to these changes and face the new changes will be confronting a tremendous crisis. Unfortunately, a university is usually unable to catch up with the contemporary social impulses. Nowadays, there are mainly several tendencies confronting the external development of a university: 1) the problems engendered in the changes of demographics; 2) the trend of globalization; 3) the development of knowledge-based economy; 4) the striding progress of information technology; and 5) the commercialization or corporation of higher education. In order to accommodate to the rapidly changing social circumstances, it is imperative to organize a university governance system that is dynamic, flexible and efficient.

Here, I would like to describe briefly the past and the present of the university governance in the Republic of China and its possible development in the future. In the Republic of China, the authority agency is the Ministry of Education, which has conducted administration according to the University Law. The 1994 Revision of University Law marks an important watershed in university governance. Before that, the Ministry of Education basically makes the rules and regulations governing all universities in the Republic of China. Thus, universities generally do not have much space for autonomy. The Ministry of Education has supreme controlling power, including the establishing of universities, the increase and decrease of departments, the assigning of presidents in public universities (those for private universities are recommended by board of directors and approved by the Ministry of Education), the number of students admitted, the amount of tuition, the core courses universally or departmentally required, the assessment of faculty credentials, etc. Such a centralized controlling system is intended for university education to attain a certain standard. But it also sacrifices university autonomy, prohibits feature development, and turns into a barrier for seeking excellence.

With the 1994 Revision of University Law, university autonomy and academic freedom are emphasized. Self-governing rights are legally allowed. University presidents are elected, not assigned. Curriculum planning is given total freedom. The University Council makes the utmost policy decision. Departmental chairs and college deans are produced by election among professors. After several years, however, university autonomy is still under certain limitation, mainly because of problems in employment and accounting. And the University Council that makes utmost policy decision also fails to function effectively.

At present, the University Law is undergoing another plan for revision. The main concern is directed toward four targets: 1) to turn public universities into "public legal persons"; 2) to establish the Assessment Committee for Higher Education; 3) to implement the Private University Law; and 4) to reorganize universities internally.

Of course, there are different problems concerning university governance in different countries and different areas, but there are also undeniably certain issues that are commonly concerned. Especially in accommodating to rapidly changing circumstances, the capability of a university in orientating itself becomes a crucial point for its continuing existence and development. Therefore, a consensus is being formed gradually: in the future university governance needs a new policy-making pattern that should run top to bottom instead of bottom to top. The importance of "campus autonomy" should be valued over the "faculty autonomy"; and to balance perfectly between the two should be a goal of future efforts.

HOW TO BOOST RESEARCH COLLABORATION BETWEEN AUSTRALIA AND TAIWAN: AN AUSTRALIAN PERSPECTIVE

Professor Doug McEachern
Australian Research Council

ABSTRACT

There is a degree of research collaboration between Australia and Taiwan. For example, this year 11 ARC Discovery Projects have commenced with Taiwanese researchers involved and this includes research fellows as well as cross country collaborations. This is significant increase on previous years. The Australian Academy of Science and Australian Academy of Technological Sciences and Engineering are partners in a National Foundation of Science and Technology agreement with the National Science Council of the Republic of China. Recently the National Science Council signed a Memorandum of Understanding on Science and Technology cooperation with the Department of Education Science and Technology in Canberra.

Both countries face a common challenge: to build research strengths that are internationally competitive and which serve their national needs in an increasingly globalised world where the knowledge economy is increasingly the driver of development and wealth. Both countries can learn from each other.

In Australia the Australian Research Council is the major government funding body supporting research in the non-medical and clinical areas. It does so through the National Competitive Grants Program. The system is application driven and based on peer review to ensure the funding of excellence across the full range of disciplines. The National Competitive Grants Program is designed in terms of an understanding of the role of research in the broader national innovation system. In *Backing Australia's Ability* (2000) the Government committed itself to a major increase in funding for research and the capture and commercialisation of intellectual property arising from an enhanced national research effort. As part of this major initiative, funding to the ARC is to double over the five years from 2002 – 2007. A number of new schemes have been introduced and others modified. Last year a Federation Fellowships program was introduced to provide significant salaries for high-flying researchers who want to conduct work in Australia. Although the prime aim of these Fellowships is to attract and retain Australians to continue their research here, up to five (out of 25) of these fellowships each year can be awarded to a non-Australian. Clearly here is a vehicle that can be used to build greater research collaboration between Australia and Taiwan.

This year the government has identified four priority areas for ARC funding: nano-technology and biomaterials; genome/phenome; complex/intelligent systems and photon science and technology. One third of the ARC funding committed in 2003 will be in the priority areas. As part of its implementation of this directive the ARC is creating a Linkage Priority Centres of Excellence program. These will be major centres with approximately \$10m of ARC funding over five years. Building and strengthening international linkages in these priority areas is fundamental to the objectives of the program. Given that both countries have shared interests in the development of science and technology in these priority areas, once again there is considerable scope for enhanced collaboration.

The present challenges of global and regional economic development are working to encourage cooperation in these cutting edge areas of research which will be mutually beneficial.



**TRANSCRIPT
OF PROCEEDINGS**

SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

MONDAY, 8 APRIL 2002

KEYNOTE ADDRESS:

**HOW TO BOOST RESEARCH COLLABORATION BETWEEN
AUSTRALIA AND TAIWAN**

SPEAKER:

PROF DOUG McEACHERN

EXECUTIVE DIRECTOR

**SOCIAL, BEHAVIOURAL AND ECONOMIC SCIENCES,
AUSTRALIAN RESEARCH COUNCIL, AUSTRALIA**

PROF McEACHERN: I welcome the opportunity to speak to you today on behalf of the Australian Research Council and to say something about our perspectives on the research system in Australia and the opportunities that it provides for universities, both in Australia and in Taiwan, to build relations and to support mutually beneficial objectives.

I also welcome the opportunity to speak after lunch and in the absence of the reporter from Campus Review! This takes some of the pressure off some of the observations I'm going to make, though they may be suitably encoded to reflect my position as a public servant answerable to ministerial authority.

I want to start by talking briefly about the Australian research system, but I'm only going to think of it in terms of non-medical research, so if your passions are in medical research I'm afraid my observations may only be of indirect relevance. And I want to make some observations about what's driving the Australian research system at the moment. I want to argue that there are in fact at the moment two core ways in which those who are making policy and arguing about policy, making bids for public money, think about research and think about why it is that scarce taxpayers' dollars should be made available for the research enterprise. They aren't completely distinct but they do produce quite different policy prescriptions and quite different ways of thinking about what money should be doing in a research system.

The first of these is one that has a long - when I say "long", I reflect my age here; I'm thinking back to the 1950s where it was alive and well, and into the sixties where it flourished. It languished for a bit after that, but has come back quite strongly in recent years, and that is the notion that the public investment in research is about the pursuit of inventions and their commercialisation. It's a very science and technology defined purpose of research. The government invests money in research in the areas of science and technology on the assumption that this will produce inventions which will be commercialised and, as a result, will bring benefit to the country in which the invention is made and commercialised. Now, bear in mind there are real complexities about even that simple story the moment you take the history of invention and its commercialisation and where the benefits of that are in fact realised, but it does give you an emphasis on why you invest in science and technology and the assumptions you make about it.

The other perspective concentrates on innovation and the notion of an innovation system. Clearly, within a conception of innovation there are all of the familiar themes of invention and commercialisation, the S&T perspective, in the sense that there is still a role for invention and an expectation about commercialisation; it's just that it is placed inside a much broader perspective about where do the problems come from, where are the solutions to be found and how is benefit to be derived from the investment the government makes in research.

It points to other disciplines apart from those that are directly in the areas of science and technology. It points to changes in the nature of intellectual

property, which again were not the inventions of either the scientists or the technologists; they came out of the social sciences and out of the humanities. They came from economics and law with a policy framework wrapped around it. All of the major commercialisations of the biotech industry are derived from the framework of law and intellectual property that allows them to be commercialised. The moment we move away from an invention and commercialisation perspective to an innovation perspective, we are starting to talk about a much broader framework of why, what and how the benefits will be derived.

In Australia these two perspectives overlap at the moment. At times the framework is almost exclusively based on S&T - science and technology. At other times it is framed equally - almost exclusively - on innovation and the innovation system, and some of the observations I will make about what the Australian Research Council does will reflect that. It should be noted that the Australian Research Council was one of the main agencies for getting the government to adopt a policy framework and a funding framework based on innovation. The role of the chief scientist and the present CEO of the ARC, Prof Vicki Sara, has been absolutely fundamental in reshaping the way in which government has been willing to think about and to fund research in Australia.

The drivers for research in Australia reflect the sources of funding and the kinds of reasons why money is made at the disposal of the research community. Most of the money that is identified and then delivered comes out of tax revenues of various forms, with governments making decisions either at state or at national level about what their priorities are in terms of the programs they will fund and the objectives they would like to see them achieve.

They do it directly, through funding agencies like CSIRO, which will conduct a research program. They do it indirectly through the Australian Research Council. They provide funds that allows the Research Council to run competitions in which researchers will write their proposals and seek to have them competitively evaluated, with the watchword being "Excellence rewarded through funding". They also do it by providing salaries and infrastructure inside the universities, where the greatest concentration of research talent lies. But this should never neglect the importance of private investment in research and development.

When trying to understand Australia's research system, its strength and its weakness and its potential, it's the intersection between what government provides through tax revenues and what the private sector does for its own decisions on what it sees as valuable, worth funding, and where it sees it as valuable to do that particular funding. And we should never forget the importance, now, of funding through philanthropy.

It's never been a very strong theme in Australia that the charitable foundations would invest in research funding, but in the last few years there has been a dramatic increase in the amount of money that's being raised through charitable

enterprises that is now being directed to a national research effort. Some of the major projects that are under way at the moment are outside the agendas of either governments or universities but are in the hands of the private charitable foundations, working with leading researchers in key sectors where they are defining solutions to problems that confront society. So we have a very complex network now of money flows from government through private business and the philanthropic foundations that shape what is going to be researched, by whom and with what bundle of resources available.

In the framework that the government operates - and it's reflected in what the ARC does - all of the research that is done is done for social benefit. It's all done to achieve a range of goods for society in economic, social, cultural and environmental terms, and if you have a look at government statements on research or if you have a look at the way in which they appear in the Australian Research Council's guidelines, that is the set of benefits. It's never simply an economic benefit. It is a range of benefits recognised as being a benefit for society.

Now, I want to say something about the Australian Research Council itself. The Australian Research Council has been around in a number of different guises for some time. We all have a passion for restructuring. So do we, and we have been restructured, and we are in the process of almost continuous restructuring at the moment. We were made independent, in the sense that we used to be part of a government department, we used to be part of DETYA, Department of Education, Training and Youth Affairs. We've been separated out. We have our own act. It establishes us as being independent, but we are still a government agency, we are still accountable to a minister, we still take directions from that minister and we provide advice to the minister. We are the major funding body outside of the medical area. We do have some role in medicine, in medical areas, but we are the major body outside of that and we have a responsibility to give government advice.

The argument about why the Australian Research Council would become independent was tied to this argument about innovation and the innovation system, the role of government and the funding of the innovation system. A major document by the government called Backing Australia's Ability announced a series of coordinated whole-of-government approaches to the research agenda and the funding of the research agenda, and all of that was wrapped up in that framework of the innovation system.

For the ARC - and this is only a small part of the total package in Backing Australia's Ability - there was a commitment to double the funding to the Australian Research Council over a period of five years; as you can see, spending \$736 million to achieve that doubling of funding. One of the objectives that was set in Backing Australia's Ability for the council was to boost world-quality research, and the theme there is one that's relevant to both countries when thinking about it. We can take a really quite simple proposition that in both countries I am sure there is a lot of research being done.

The question is: how much of that research is internationally competitive, at the cutting edge of the internationally defined research agenda? The reason why we are charged under Backing Australia's Ability and the way in which we have been organised is the recognition that in the future it's internationally competitive research, research with a high level of international impact, which is going to drive the benefits that are derived by societies. It's not the mass of research that is being undertaken; it's those particular parts of it that are of international competitive quality.

The government also provided funding to increase infrastructure - a recognition that some of it is remarkably costly, that it's necessary and that a country like Australia with a small population and a small economy needs to be strategic in its choices but it also needs to back them by cash; to improve competitiveness of researchers' salaries, which we've only just started to do; and to increase the funding to the core programs of the Australian Research Council.

Under Backing Australia's Ability there were a number of programs that were introduced, all wrapped up with these themes. Federation fellowships were the flagship programs in which significant salaries were paid to researchers, essentially located in universities though not required to be so, and with strong support from those institutions that provided a home for them. Federation fellowships are available across the whole of the disciplinary spectrum. The ARC operates with a sense of all disciplines being important and it's the international competitive quality that drives the decision of what will be funded.

Increasing the number of postdoctorates. A problem in the Australian system has been the limited number of postdocs. We need a greater number of these to enhance our research capacity. Again, improve the salaries. But there's the one that you may be interested in: \$176 million put on the table for two research centres, one in information and communication technology and one in biotechnology, representing two different strands of how Australia thinks about its areas of strength and its areas of intended strength.

Now, if you're going to spend money on name centres, a number of different strategies lie behind why you put that money up. It's either in an area in which the country already has an established competitive edge and the investment is justified by the impact that will be increased by that, or in an area where there are opportunities because the researchers that are operating it need more resources or they need to make more international connections and get greater strength and mass, a critical mass, to make advancement. The difference between the ICT and the biotechnology centres and the strategies behind them reflects those two different views of what's to be done.

The ARC, under the new scheme, operates through its argument about the national innovation system. It argues about what's happening in universities, what happens in private enterprise, where do the research agendas come from, where do the resources come from, where do the researchers come from, how are they to be combined - that is, the researchers and the resources - in a way which will give the maximum impact?

In this particular part of the argument, it's about the ARC's role in supporting fundamental research in the universities and in other areas where fundamental research is being undertaken, and then promoting linkages with either private enterprise or other bodies to create critical mass in what we have described here as public research institutes, so things like those two centres, and there are a number of other centres that are being created, a number of other initiatives that bring together private funding, government funding, university funding and ARC funding to create a critical mass within which we can actually make a difference.

There are two major schemes that the ARC runs, the two largest schemes that it runs. Discovery is the one which we see as the core of what we do, because it is the one that supports fundamental research. It is possible for a government to take a very clean view: "We want impact, we want outcomes, and so we want to fund things that are on the point of commercialisation or can be commercialised, where the benefits can be captured in a relatively quick time frame." One of the things that the ARC has been successful in doing is to persuade government that, in Australia, it recognises that fundamental research is the basis for the subsequent development of those ideas that can be commercialised, that can have intellectual property forms, that can lead to the benefits being captured. And so Discovery has remained at the core of the ARC's programs.

It's the largest scheme that it runs, it has the largest amount of funding, and it supports excellent fundamental research, and, again, without a barrier on where that research comes from. It assists them to undertake the research in the best conditions and it keeps asking the question about what are the best conditions for the best impact to the research. It's committed to expanding Australia's knowledge base and its research capability and it's particularly concerned about research training and how to get the combination of the best researchers doing the best research in the best conditions, and with the research students being available and working with those researchers in those best conditions. Discovery is an application-driven system. I'll say a little bit more about the bits where it isn't.

The other schemes that we operate are all seen under the title of Linkage because we see our role as funding fundamental research, but we also see the importance of connections between the fundamental research that's being done, society, its problems and its opportunities, and we want to find ways of strengthening and increasing our capacity to contribute to social benefit. So we are concerned about all the ways in which linkages can be created between researchers and society, their communities and industry, whatever those particular areas are, and we have a series of schemes all of which rely on cooperation, collaboration, linkages: connections between university researchers and that surrounding research-using community.

So we are interested in collaborative research, a notion of the knowledge economy which underpins our arguments about innovation, we want more

opportunities for cooperation, including international linkages, and we want to encourage industry-oriented research and research training.

As part of the ARC's reorganisation, it became an independent organisation, with the minister having the legal power of direction. The minister can define a research agenda and issue an instruction to the ARC, which is what has happened in this last year. As recognition of the increased funding to the ARC, the minister has issued a direction, "One-third of the total funds to be allocated this year for funding commencing in 2003 and stretching through for five years will be in these four priority areas: nano materials, bio materials, genome-phenome, complex intelligence systems, and photon science and technology." It's a really major commitment and changes the framework within which we operate, within which Australian researchers operate and in which our international cooperation will be driven - that is, how will we relate to these particular areas of priority?

The question is: how are we going to build relations between Australia and Taiwan in this particular meeting? That's the point we are raising. The Australian Research Council is facing a really interesting situation. In the past it's had - well, it has still - a Linkage international scheme that's there to facilitate cooperation and collaboration between researchers across the globe. But the debate inside the ARC is: is that the appropriate mechanism for creating the circumstances for cooperation? Should it be spending more of its resources underpinning those cooperative relations or should it be concerned to design its schemes so that they are open and permissive so that researchers in Australia, building collaboration with their researcher colleagues in international domains, whether they are from Taiwan or whether they're from somewhere else - the schemes are permissive so that collaboration can appear in our normal, ordinary, routine grant programs of either Discovery or Linkage?

At the moment the argument is really finely poised: "Yes, we're going to have an international plan which will tell us what we're doing", but underlying that is the argument that our normal scheme should in fact be permissive, and the argument at the moment is that they are permissive and what is required is not that the ARC should be taking initiatives to say, "We want to work with X or Y in the following area," but that the research drivers in the community, whether they be in government or whether they be in the universities or whether they be in industry, should be creating those connections, those forms of collaboration, and then using the available mechanisms inside the ARC to support that collaboration, because all of the schemes the ARC runs are open. They can all have international researchers as part of the investigators on those grants and the collaboration itself, in various measures, can be funded through the operations of those ARC schemes.

So when we are thinking of the total question of what kind of research issues are going to be taken up, how are they going to be managed, what are the best resources to achieve internationally competitive, high-impact research, inside the ARC our argument is that on the one hand we're going to have an international plan because we want to know what we're going to be doing, but

on the other hand we want a system which is open to the wishes, the desires and the existing collaborations, and the potential of those collaborations, by researchers commonly binding together to make that kind of research that we fund - that is, that with a high international impact.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002 年 4 月 8 日（星期一）

專題討論

如何促進澳洲與台灣的研究合作

演講者

澳洲研究委員會

社會、行為暨經濟科學研究處處長

DOUG McEACHERN 教授

今天很高興能代表「澳洲研究委員會」(the Australian Research Council)為各位說明我們對澳洲學術研究規劃及經費補助之體系的觀點，以及它所能為澳洲和台灣的大學在合作關係的建立上，及支援系統所能達到的互惠互利的目標及機會。

我也很慶幸能在午餐後、在《校園評論》(*Campus Review*)記者缺席的情況下來發表我的看法。這讓我對於接下來要做的觀察報告，減輕了不少壓力。雖然這些觀察或能適當地顯示我身為政府公務員的立場。身為公僕，我必須向教育部長官負責。

首先，我要對於澳洲學術研究體系，作一個簡略地介紹，但是我只把它定位在非醫學的研究，如果你感興趣的是醫學研究，可能從我的報告中找不出什麼關聯性。我會對當今澳洲研究體系的運作方式作一些檢測報告，以及探討目前政策實際運作的兩派影響力。這樣的觀點影響了政策制定者，而且引發爭議，這些人決定了公共資金應該投注於何處，考量有關研究以及為什麼要把納稅人有限的稅金資助給研究單位的理由。他們的理念並非完全南轅北轍，但是實際上卻制定出非常不同的政策方針，對於何種資金應該用在研究體系，也有非常不一樣的思考模式。

第一派影響力由來已久，說到「久」，這似乎洩露了我的年齡。回溯到 1950 年代，此派觀點被廣為肯定，到了 1960 年代更是大放異彩，之後雖然受到一些挫敗，但是近年來又迅速地蓬勃發展。這種運作觀點就是公共的資金應該要投資在追求發明以及其在商業用途的研究，將研究的目的定義在以科學和科技為主要導向。政府將資金投注在科學以及科技領域的研究，是假設如此做將可以產生商業化的發明，也因此能為國家帶來利益。然而，現實狀況往往是十分複雜的，就算你有史無前例的新發明，將其商業化後的利益也顯而易見，但這卻會使你不禁想要去探討為什麼要把錢投資在科學和科技的研究，以及為什麼要以創造利益為前提。

另一種觀點則是將焦點放在創新及創新系統，這包括了發明和研究成果商品化，也就是科學和技術這些大家所熟悉的主題。在這個觀點之中，發明和商品化仍然是執行的要項，只是它們被定位在更寬廣的領域內，這其中包括了找出問題的來源、到何處尋求解決之道以及政府在研究方面的投資將如何衍生利益。

這種觀點指出了以科學和科技領域為直接導向之外的另一些執行原則，而且體會到智慧財產在本質上的改變並不是科學家或技術人員發明出來的，而是社會科學和人文學科的產物，它們是源自涵蓋政策體制的經濟和法律。例如所有主要

的生物科技的商品化過程，都是在法律和智慧財產的架構下進行。當我們把重點由發明和商業化移轉至革新和改變，就是指在一個更廣域的體制下，探討衍生利益的各種狀況。

目前在澳洲這兩種觀點互相重疊運作，有時候，整個架構幾乎完全以科學和技術之研究為重心。有些時候，則是幾乎全面強調創新的研究以及建立創新制度。這在我所作的一些關於澳洲研究委員會事務觀察報告中將會提到。值得一提的是，在建議聯邦政府採用以創新為本的政策架構以及經費補助架構時，澳洲研究委員是其中一個的重要機構。聯邦政府首席科學家 Robin Batterham 教授以及現任澳洲研究委員會執行長 Vicki Sara 教授，對重新界定研究大方向時發揮了舉足輕重的影響力，使得政府願意去考慮以及贊助澳洲的研究。

在澳洲，經費來源單位決定研究單位的研究計劃方針，大部分的經費，都是來自各種形式的年度稅收，根據研究計劃的重要性，由地方或是中央政府決定撥款與否及其先後順序。

經費贊助是由類似「聯邦科學暨工業研究組織」(CSIRO)的機構來直接指揮研究計劃，或是委任澳洲研究委員會來執行。經由撥款給委員會來舉辦各種競賽，許多研究員就會竭盡所能的提出企劃書，它們也會提供薪資和基礎設施，聘請大學裡的專才作研究；民間在研發領域的投資，也舉足輕重。

澳洲研究體系的優劣點以及潛力何在？基本上，研究經費是來自政府的稅收提撥以及可以自行決定贊助對象的民間團體，當然慈善機構的經費贊助也舉足輕重。

澳洲的慈善機構傳統上對援助研究計劃並不十分積極，但是過去幾年，從慈善機構所募集的經費卻明顯增加許多，而這些錢也正用於全國性的研究。有一些正在進行中的重要企畫，並不是由政府或是大學所主導，而是由私人慈善基金會重要部門的頂尖研究員來進行，為社會所面臨的各種問題，尋求解決之道。由此可知，我們的經費來源很複雜，包括有政府、私人企業和慈善基金會，由他們來決定要將這許多不同來源的可用資金，作何種的研究以及由誰來負責進行。

從政府運作的架構內，可以反映出澳洲研究委員會在作些甚麼，事實上，所有我們的研究，都是為了社會大眾的利益，範圍涵蓋了經濟、社會、文化和環境各個層面。如果你看一下政府對研究的陳述，或是它們出現在澳洲研究委員會工作指南的方式，就可以瞭解，該委員會所作的事，是考慮到社會大眾群體所有的利益，而不是單一在經濟方面的好處。

現在，我要介紹有關澳洲研究委員會本身的事務，委員會不時會以一些不同的風貌呈現。每個人都渴望能夠重新改造，澳洲研究委員會也不例外。組織結構經過重新改造，一直到現在還在不斷因時制宜。我們雖曾經隸屬於教育部，但卻是以獨立運作為設立宗旨，目前是一個獨立的單位，有自己的工作目標，儘管如此，我們還是屬於官方機構而必須向聯邦教育、科學暨訓練部部長負責，我們依循部長的指示做事，同時也向他提供建議。我們雖然也部分插足於醫藥界，但實際上是非醫療領域的主要經費贊助單位，我們有向政府提供建議的責任。

有關澳洲研究委員會為何要獨立運作的爭議是源自於對創新體系、政府的角色，以及創新體系經費贊助的議論。在一份由政府所公佈「厚植澳洲國力」(Backing Australia's Ability) 的一系列相當於「全政府」的文件中，有觸及到研究和支援研究經費的議程，而所有的這些項目，都被包裝在創新體系的架構內。

對澳洲研究委員會而言，「厚植澳洲國力」方案曾經承諾五年內要給我們雙倍的經費。但是就如各位所見，我們只得到七億三千六百萬，這只佔整個「厚植澳洲國力」方案一小部分，而這個方案賦予澳洲研究委員會的目標之一是要推動國際水準的研究。關於這一點，我想到其中有一個主題和澳洲及台灣都有關聯，我們可以在雙方已合作著手的許多研究中，採用一個非常簡單的計劃來進行。

問題是：怎麼樣的研究才稱得上是具國際競爭力的研究，且可列入國際研究議題的重要地位？把本研究機構列入「厚植澳洲國力」的目的，是因為體認到具有國際競爭力且又具有國際影響力的研究將有益於社會。這並不是做很多研究就可以了，而是要針對部份具國際競爭力品質研究做重點性的加強。

政府亦提供經費來增加基礎設備，雖然這需要驚人的經費，但在澳洲這樣人口少經濟需求小的國家，這樣的投資仍是必要的。例如目前我們正準備提高研究人員的薪資，並且在本研究中心的核心方案增加投入的經費。

「厚植澳洲國力」計劃中有許多方案，都集中在這些重點上。聯邦院士獎勵補助提供高額的薪資以吸引研究人材就是其中一項旗艦計劃，雖然並未要求需設置在大學內，但我們仍認為必須這樣才能受到提供場所的機構強力支持。提供各式各樣研究經費的補助，澳洲研究委員會也有準則規定，依研究的國際競爭品質來決定經費發放與否。

另外，增加博士後研究的人材，澳洲的博士後研究生不多，我們需要更多的人才來加強我們的研究能力。再次強調，必須要改善薪資部份。有一項數字給大

家參考，約有一億七千六百萬的經費投入兩個研究方面：一個是資訊與通訊技術，另一個則是生物科技，這兩個不同的領域是澳洲政府認為澳洲較專門且值得加強的重點項目。

假如你要花錢在既有的研究中心，可透過許多方式來評估要投入在那個研究，是選擇現在已具有競爭優勢且經過評選通過的研究，或是選擇研究人員需要許多資源或許多國際間合作而可能成功的研究。不同派影響力的策略及經費補助標準差異，反應在資訊通訊科技及生化的研究不同走向。

在新的計劃運作下，澳洲研究委員會從頭到尾對於國家發明體系提出意見，討論有關大學、私人企業的問題、研究議程從那裡來、從那裡取得資源、研究人員從那來及如何將這些整合的問題，也就是研究人員和資源如何結合的問題，才能做出最具影響力的研究。

其中較特殊的部份在於澳洲研究委員會在這些已進行基礎研究的大學或其他機構所扮演的角色，以及促進與民間企業或其他機構合作以創造關鍵性的結合。像先前所提到的兩個方向及其他許多領域以及其他結合民間資金、政府資金、大學資金及澳洲研究委員會資金所採取的行動來創造出可以使成果更出色的合作關係。

澳洲研究委員會目前正在執行兩個主要計劃，為目前所執行最大的兩個計劃。發現新的事物是其中之一，也是我們視為所有行動的核心，因為其支撐了基礎研究。政府抱持著一個非常清楚的觀念：「我們需要影響力，我們需要結果，因此我們投資資金在具有商業價值或可能具有商業價值的事物上，因為具有商業價值的事物可以較快獲利。」澳洲研究委員會曾經成功地說服澳洲政府，在澳洲，基礎研究是奠定未來具有商業價值構想的基礎，智慧財產的研究可能啟發其他可獲利的價值構想。因此，發現新的事物仍保留於澳洲研究委員會計劃的核心。

這是目前澳洲研究委員會正在進行的最大計劃，有最多的經費贊助優秀的基礎研究，而且不乏研究項目。澳洲研究委員會協助進行研究以達最佳狀況並督導其保持研究的最佳狀況，澳洲研究委員會盡力擴展澳洲的知識基礎和研究的能力，以及特別關心研究訓練和如何結合最好的研究人員在最佳的環境下從事最佳的研究，還有讓研究學員可以在最佳環境下與這些研究人員一起工作。發現新的事物是屬於「應用導向系統」，我等一下會再針對這點多做一些說明。

另外一個主要計劃便是結合的工作，我們將自己的角色定位為資助基礎研究的單位，但是我們也知道結合基礎研究、社會、其所產生的問題及契機的重要性，

給與這些基礎研究助力以貢獻給社會。因此我們考量所有可能結合研究人員和社會的管道，包括任何特殊的領域及產業，提供一系列透過合作而結合的計劃，將大學研究人員及因研究而受益的社會相結合。

因此我們對於合作研究很感興趣，一個為我們對發明論點打下基礎的知識經濟概念。我們須要更多的合作機會，包括國際上的合作，我們也鼓勵產業相關的研究及研究訓練。

做為澳洲研究委員會改組後的一部份，我們已成為獨立的組織，部長擁有管理上法定權力，部長可指示研究議題並下指令給澳洲研究委員會。在確認澳洲研究委員會的經費增加後，部長已簽出指示：「今年的預算規劃是，從 2003 年起的五年內，總經費的三分之一分配著重在四個主要方面：極微材料和生化材料、整組基因研究、複雜的智慧系統及光子技術。」這是個重要的任務並改變了我們運作的體制。在新的體制下，經由澳洲研究人員運作並帶動國際合作，也正說明了我們如何達成以上的任務。

接著問題又來了，如何在這個特殊的會議中建立澳洲與台灣之間的關係，這是我們正要討論的重點。澳洲研究委員會目前正面臨一個有趣的狀況，一個目前仍存在的稱為「結合國際計劃」以協助全球的研究人員之間的合作，然而澳洲研究委員會內部仍有爭議，對其是否為創造合作環境的適當機制提出問題，是否應投入更多的經費為合作關係打下基礎或是否應考慮規劃一些計劃讓他們有更大的發揮空間，如此一來在澳洲的研究人員可以與國際間的研究伙伴合作。不論是來自澳洲或其他地區，寬鬆的計劃允許合作可列入發明新事物或結合計劃之一般例行補助計劃中。

目前我們已妥善地處理這個問題，「是的，我們將進行一個可以告訴我們正在做什麼的國際計劃」，然而在此背後，仍有一個問題，也就是我們正常計劃應該要放寬的問題，而這個問題的許可與否不應該由澳洲研究委員會主動來說：「我們要和 X 或 Y 合作以下的領域」，而是由社會上的研究驅策者來決定。不管是在政府內或大學裡或產業中的研究驅策者應彼此結合，以合作的形式並利用澳洲研究委員會內可行的機制來協助這些合作關係，因為澳洲研究委員會所運作的所有計劃都是開放的。他們可以在各種經許可的計劃或合作方案下採用國際研究人員做為一部份的調查人員，透過澳洲研究委員會運作的計劃中獲得經費。

所以當我們思考該進行那些研究議題，研究的管理及如何善用有限的資源以達國際競爭力水平時，澳洲研究委員會將重點放在兩方面：一方面我們要進行國際計劃，因為我們要知道我們目標為何；另一方面我們需要一個開放的系統，鼓

勵現有研究的統合，滿足研究人員對真象的追求，並開發可能的研究潛力，將經費投資在獎勵具國際水準的研究上。

A PROPOSAL TO ENHANCE RESEARCH COLLABORATION BETWEEN TAIWAN AND AUSTRALIA

Maw-Kuen Wu

Institute of Physics, Academia Sinica
Nankang, Taipei, Taiwan ROC

ABSTRACT

The National Science Council, as the primary government agency that sponsor basic and apply researches in Taiwan, has actively sponsored all areas of academic researches, including natural sciences, engineering, life sciences, humanity and social sciences and science education. Its missions are to set up policies to further advance our knowledge on new technologies for people's need, so that we can create a better environment for all people and to assure sustainable developments of the country. Thus, it is our hope through the combined effort of our two countries we can provide a better policy to foster the pursuit of new technology and the development of technologies for humanistic concerns, such as better health, well-being and enriched culture of all segments of the population. There are several aspirations, especially from our perspective, that we hope to accomplish through the establishment of close interactions with the Australian research community:

The establishment of various Centers of Excellence, in order to enhance our research capability toward true excellence.

The close collaborations among various disciplines. We have decided at the sixth national conference (which was held early last year) the following areas as the highest national priority in researches: 1) Development of bio- and bio-medicine technology—we are setting up a national project for functional genomics and bio-informatics; 2) Development of advanced materials (nano-material) and specialty chemicals; 3) Development of new energy resources and environmental technology; 4) Information technology and software development; 5) Telecommunication system—including research on 4G telecom technologies; 6) Micro-electrical-mechanical system and precision machinery. We earnestly hope through joint workshop, joint research projects and close information exchange we can reach excellence in these research areas.

Education of young talents—through exchange of students, post-doctoral training and etc.

Joint collaboration in using major, capital facilities such as SRRRC, TRRII, facilities.

Today at this memorable occasion of the first Australia-Taiwan Conference on higher education, this represent the first step of our mutual interaction. I certainly look forward to seeing a much closer interaction and exchange among us in the future to cultivate our genuine collaboration. I shall present to you the details of our proposal for a strong collaboration in research and development of science and technology between our two countries.

TECHNOLOGY COMMERCIALISATION STRATEGIES

David Henderson

Managing Director, UniQuest Pty Limited

ABSTRACT

UniQuest Pty Limited, the technology transfer company of the University of Queensland, initiated a major change in commercialisation strategy in 1995. The previous licencing model for technology transfer was abandoned in favour of a strategy which focused on commercialising the University's intellectual property by establishing startup companies. To support the new strategy, the University invested \$5 million in UniQuest to enable the company to recruit highly qualified commercial staff, and to fund the company through the period from when the startups were established until funds are returned via exits. The University also supported the establishment of a \$20 million venture fund to bridge the gap in funding for early stage companies in Australia.

The change in strategy has proved very successful, with UniQuest's revenues growing from \$15 million to near \$50 million this year, approximately half of which comes to the University. The company has established or spun off over 25 new companies, and now has a valuable portfolio of shares which can be sold to provide additional funds for the University.

This presentation overviews the technology commercialisation process, covers the rationale for the change in strategy, how it was implemented, the results, and lessons learned along the way.



**TRANSCRIPT
OF PROCEEDINGS**

SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

MONDAY, 8 APRIL 2002

FOCUS SESSION:

RESEARCH - COMMERCIALISATION

SPEAKER:

MR DAVID HENDERSON

MANAGING DIRECTOR

UNIQUEST, AUSTRALIA

MR HENDERSON: Thank you for attending this session on commercialisation of research. In Australia it's becoming increasingly important, particularly because the government is focusing on commercialisation of research and achieving outcomes from the funding it provides, and we're seeing moves to have some of the allocation criteria for research funding tagged to commercialisation successes. Then also it's extremely important because the government funding for universities in Australia, direct funding, is falling and the universities are looking to all sources of income to increase their research capability and funding for their operations.

Traditionally, universities have commercialised technologies by licensing. This is a tradition that has gone back many years. But at the University of Queensland it was recognised as not really achieving the sort of activity and results that the university was hoping to achieve, so the university is moving now to commercialising via start-up companies. This is a trend which is happening more and more across Australia, although I would have to say that probably the University of Queensland is one of the more advanced in this area.

What I am talking to you today about is what we have done at the University of Queensland, the strategies we have adopted, and how we have implemented them, to make that shift from a licensing strategy to a commercial strategy focused on start-ups. First I'll begin by giving you a little background on the University of Queensland, to put it in perspective so that you can compare it with your university. Roughly speaking, the University of Queensland has \$600 million income a year. It has 32,000 students and about 6,000 staff, and the R&D expenditure is about \$216 million each year. That gives you some sort of benchmark when looking at the activities of your university and the University of Queensland.

As I said, looking back to 1995, basically the University of Queensland had a very conventional licensing strategy; typical university technology licensing office process where disclosures were received by the researchers, they were assessed for commercial potential. There was preliminary due diligence and evaluation. If they passed that test and it looked like someone might be interested in commercialising them, work was undertaken to find a licensee or a business partner, and then the technology was licensed to that partner or company.

While this was effective at getting technologies into the marketplace, the university found that it received very little income from this process, and that's due largely to the big gap in time frames from when you start expending money on commercialising technologies and when you receive a return. This particular chart is an example of one of our biotechnology technologies, and you can see that the first patent for that technology was submitted in 1990. There is a period when the technology was developed and a couple more patents were lodged, and then commercial interactions began. There was a licence struck about five or six years later and there have been some small licence payments subsequently, but the big returns are expected in the next

three to five years' time.

Overall, you're looking at a process that takes 20 to 25 years to go through, with most of the income starting almost 20 years after the first technology was discovered. This is a traditional problem of technology transfer - that you have the expenses up-front, you have to fund the patents, you have to fund the research, you have to fund all the commercial activities to find the commercial partner, and then you wait until that technology is a product in the marketplace with substantial sales that can generate royalty income to return that investment. And it's a long wait.

That is the conundrum of technology transfer, and one of the reasons why the University of Queensland began looking to see if there was a better way to do it which could produce more income sooner and a better result for the university. One of the things that really pointed us in the right direction was a study that came out of MIT in 1995. They essentially found that 35 per cent of their licences had been delivered to start-ups and 77 per cent of the investment in all of their licences came from those start-ups and, what's more, 70 per cent of the jobs that were created from all of their technologies were created in those start-up companies. Of course the majority of start-ups were local and close to MIT.

Extrapolating from those sorts of figures, it's pretty obvious that the benefits for the local community are much greater through a start-up strategy than a licensing strategy, particularly in a country like Australia which has very few global multinationals based here, other than in the mining industry, and so most of the best Australian technologies are often licensed to overseas corporations and the benefits take a while to flow, as we've seen.

So combing these factors and looking to try and ramp up the commercialisation activities at the university, in 1996 the university invested \$5 million in UniQuest to fund a start-up strategy to change the way we were doing technology commercialisation. Money was to be used to build the capabilities of the technology commercialisation company - that's UniQuest - to enable it to adopt a start-up strategy because there are very different skills and experience required, to fund the cash flow gap because although licensing strategies don't produce large amounts of money until a long time later when the products are in the marketplace, normally you can negotiate small up-front fees that are enough to keep the tech transfer office ticking over and funding the activity.

So if you adopt the principle of going to start-ups, then you have a few years where you don't receive that income until you can start selling shares or getting returns from those start-ups. The money was also to be used to fund the increased costs - legal, professional and marketing costs. There's more work involved in doing a start-up than a simple licence. You need more lawyers, you need more accountants, et cetera, so there is a higher expense. Also, I guess the last thing was that the university wanted to be totally free of commercialisation expenses. Investment was intended to make UniQuest at that time self-sufficient so that UniQuest would also take over the patent costs

of the university.

The investment took place in 96 and in the three to four years after that there was very much a focus on implementing that strategy, and we believe we've now got to the point where it's fairly well a complete implementation. The first step in the implementation was to establish a commercial structure for the university, and essentially a company named UQ Holdings was created as a holding company for the university's commercial operations, and UniQuest was moved under UQ Holdings as a 100 per cent subsidiary, so it remained owned by the university through the vehicle of UQ Holdings. Since then of course there have been a number of other commercialisation companies spun off from UniQuest which have all fallen under that same structure.

With the correct commercial structure in place, that was the starting point. The next step was also to look at incentives for the researchers and the departments to support commercialisation of intellectual property. The university at the time did have a policy of sharing awards with the researchers but it was relatively small and not regarded by the researchers as any great incentive or motivation to undertake commercialisation. That was changed to a simple what we call a third, a third, a third split, where basically when commercialisation income is received the costs are deducted - things such as patent costs - and then what is left is split; one third to the inventors or the researchers, one third goes to the department or faculty which hosted that inventor, and one third is retained by UniQuest to fund commercialisation activities.

The rationale for this is that you're incentivising the inventor, the creator of the technology, to support and actively engage in the commercialisation process, because quite often the researchers have to make choices between publication of developments and commercialisation, where in many cases commercialisation requires at least a delay in publication of results in order to avoid invalidating patents. It's also important to have the support of the head of the department or the head of the faculty which hosts that, so that they're not pushing the researchers to publish and undertake teaching duties, as opposed to commercialisation activities. So there need to be some incentives for the departments and faculties.

Obviously lastly, UniQuest and the university need funding to maintain the commercialisation process. That has been very successful and, in fact, there are moves at this stage, in the case of inventors who are very actively involved in driving commercialisation, to award them an even higher percentage than one-third of the splits.

The next stage, the next important element, was to build the capability of the team, to have people who could actively package and set up and market start-ups. We set about building a new team; in fact, it virtually recreated the team at UniQuest involved in technology commercialisation. We looked for a number of capabilities. First of all, we found it essential that the people have the right technical qualifications. They had to be able to talk to the researchers

and operate on the same level to gain their confidence and to be able to work effectively in understanding the technology and designing business plans and strategies around that.

We also looked for people who had business qualifications. We found typically an MBA was a very good grounding for this sort of work. MBA teaches strategy, accounting, human resources, development, production - all the aspects that you need to at least have an understanding of what it takes to put a company together and drive it in the early stages. We looked for people who had international experience, because it's an international game that we're all in, and we found people who have lived and worked overseas are obviously able to adapt and work in those environments a lot easier than those who haven't.

We also looked for people who had been CEOs of companies as well. We found that someone who had been a CEO was used to the concept of taking total responsibility - as they say, "The buck stops here" - for a project or a technology and setting that up in a company and then driving that company forward to deliver a successful result. Those were really the key criteria that we adopted for the people we wanted to build the capability of UniQuest for this start-up strategy.

We found that most people of course came from outside of the university. We have a couple who have been recruited from inside universities and have developed the business skills as they went. We have found it has been generally more successful by hiring people who have had a career in business, and then working with them and training them to work within the university environment, rather than taking people who have had a career in the university environment and trying to teach and train them to work in a business environment. That has been our experience.

Another major innovation in our terms was establishing a structure - what we call a hub-and-spoke structure. Again, previously UniQuest was a central group in a building and it was a licensing strategy and researchers came to UniQuest when they had a technology. With the new strategy we located people in each of the major faculties. We called them managers of innovation and commercial development, and their role is to seek out innovation and encourage it, and then propose commercial development of that innovation. It has been very successful.

These people are jointly funded by the faculties themselves and the corporate university, as well as UniQuest, so everybody has a financial stake in their success. They are regarded as senior members of the faculty. They have an office which is normally adjacent or very close to the dean of the faculty. They participate in faculty management meetings and they are regarded as the commercial adviser for the faculty, as well as having a real hands-on role to work with the researchers, walk the corridors, identify new technologies, patent them, and then guide the commercialisation process.

As you might imagine, that's a pretty full-time role, and you will find that when you're doing a major commercialisation deal it's almost a full-time occupation. We have found that a person can really only handle two or, at the most, three significant commercialisation deals. They just don't have the hours in the day otherwise. Hence, we have a strong group that we call the "core tech con" group, which is a central group based at UniQuest, and they are a central resource to be called upon by the people in the faculties to deliver the extra resources to help them to close the deals.

The people in the faculties might have involvement with 10, 20, 30, 40, 50 projects even, and the people in the central group are the main resource in driving those and packaging and raising the money and they might only have two or three projects each that they're really focusing on at the time. We have found that, having this structure of people actually located in the faculties but being UniQuest employees has really more than doubled the number of innovations coming out of the university faculties. It has been very successful.

Then of course we set up and managed the technology commercialisation pipeline. We have a formal process supported by a database and management meetings, which takes the disclosures from the very earliest stage. They come from the faculties. We have what is called a disclosure register which lists every piece of innovation in the university that has been discovered. That is then culled and looked at carefully to determine which of those have commercial potential and those which are identified as of commercial potential are classified as projects and resources are started to apply to the commercialisation and further due diligence.

The next major cut comes at the time when patents are lodged. We have a formal process of a patent committee which allocates funds to patents and we have formal agreements with the researchers, that if the technology is to be patented they understand the implications of that about publication and they undertake to support the commercialisation process and work with us to make it happen. Then obviously, of those patents not all of them end up being licensed or into start-ups, but the process gradually winnows down to the point where we have completed deals and you go through then a process of management of those deals until the time comes for exit when you realise the cash return or, if it's a licence, you still receive the royalties.

It's important to point out that not all technologies are suitable for start-ups. Many are not, so we do maintain a dual commercialisation stream where only those that are appropriate for start-ups are commercialised in that fashion, and the rest are licensed. In fact, we still have many more licences than start-ups at this point. That's still a viability activity. But we have found that our success in licensing has also gone up by virtue of having people of perhaps a higher capability than we had in the past undertaking the work.

One other major drawback in Queensland in particular in relation to start-up strategy was that there was a serious lack of venture capital when compared to other parts of the world and even Australia. Back in 1988 when this was first a

concern Queensland was languishing at the bottom of the table in Australia in terms of venture capital investment per capita, and obviously a long way behind the United States which was leading the field. This was a crucial problem, because venture capitalists rarely invest beyond their home town. They like to be able to go and visit the investee companies, go to board meetings, drop in when they want to, check on how their investments are going and, if it means they have to spend a day away from the office or get on an aeroplane, it's a major disincentive to investing. The fact that we had very few venture capital firms in Queensland was indicative of the low rate of venture capital investment in the state.

To address that, the university established, under our suggestion, a \$20 million seed venture capital fund jointly with the University of Melbourne. It just so happened it was a very favourable coincidence of timing that the University of Melbourne had just done a very successful IPO which many of you will have heard of - Melbourne IT - which although has had a lot of press, some of it unfavourable, was a tremendous event for the university. From that particular IPO something like \$70 million had been donated back to the University of Melbourne.

Some of the funding that was left was set aside to address commercialisation so they could produce more similar types of deals and so the University of Melbourne was able to put up \$10 million and the University of Queensland had some profits from some previous commercial land dealings which it invested to set up the other half of the fund. The important element of this joint fund was to create a certain contention to ensure that true investment principles were maintained.

One of the dangers in running funds within universities that other places have seen is that at times the investment decisions are coloured by political considerations and they're not as good an investment decision as you might get from a totally external investment party. By using the two universities, and having all investments approved by other parties, it avoids this potential conflict or potential risk of highjacking for political purposes.

The essential component of it was a \$20 million fund, intended to be a seed fund - minimum investment \$50,000, maximum half a million dollars - with 90 per cent of the investment sourced from the University of Queensland or the University of Melbourne; so very much a home-town fund or a captive fund. As I mentioned, there was a joint investment committee which was crucial to the adoption and success of the thing, and in process at the moment we have established a follow-on fund which will provide investment amounts from half a million dollars up to \$5 million or \$6 million. The whole objective of this fund was to increase the value of these early technologies and prepare them for investment and later stage funding.

With that fund, UQ has we believe created all the ingredients for successful technology commercialisation. It has a strong, capable, well-resourced commercialisation company in UniQuest, it has the seed funding necessary to

support a start-up strategy, and I might add that the Australian government has been very receptive to this at the moment and they have also embarked upon a program called the Pre-Seed Funding Program, where they are currently assessing applications from I guess applicants largely from the private sector to jointly fund with those private sector applicants more pre-seed funds, and they have allocated something like \$70 million to support that activity of government funding. So we will see more seed funds following on. Of course we have a catchment of excellent researches at the University of Queensland, so all the ingredients to set up the start-ups and licences for the future.

Now, the results: since 1995 we have established and spun off more than 40 companies. I have to obviously point out that, as with any venture capital type investment, there are winners and there are losers. I think all of the companies are still going but some of them are not doing very much at this point. But, nevertheless we have a very good group of strong companies that are growing and have raised second and third and fourth rounds of funding and are well on the way to IPO. We are looking very promising, and in fact this year is the first year when the first of the investments are sufficiently mature that we're looking to sell shares in those companies and start to realise the cash returns from the strategy.

In the process UniQuest itself has grown quite significantly, from revenues of about \$13 million in 1995 to last year we hit \$47 million in revenues; three and a half times growth in that period. What is more, about half of those revenues flow through or accrue to the university, so the university has seen a very handsome return from its initial \$5 million investment.

In summary, the benefits of this strategy to the University of Queensland: from an initial \$5 million investment, they now have a valuable portfolio of shares in growing companies which will be starting to be realised. They have seen very definitely an increase in research funding, an increase in the unencumbered income for the university. This increased activity has enabled the university to leverage additional government funding by the various granting mechanisms of the University of Queensland, and they have been relieved from the costs of funding patents and commercialisation for the last five years. Based on the previous trends, they would have spent more than the \$5 million in that activity alone over that period, if UniQuest hadn't taken the investment and recreated itself at the time.

In our view the start-up strategy has definitely created more opportunities and more income for the university and done that much sooner than would have occurred under a straight licensing strategy.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002 年 4 月 8 日（星期一）

專題討論

研究成果商品化

演講者

澳洲 UNIQUEST 董事長
DAVID HENDERSON 先生

感謝各位撥冗參加這場有關研究成果商品化的討論會。在澳洲，這種觀念變得愈來愈重要，主要是因為政府正著重於研究成果商品化，同時也從贊助的研究成果商品化獲得一些成果；另外，商品化成功也在研究資金的分配上取得優勢。這也是相當重要的一點，因為澳洲政府直接提撥給大學的資金正逐年減少中，各大學也正尋找財源以提昇其研究能力及維持校務運作。

傳統上，大學利用授權的方式將科技成果商品化，這種做法已經行之多年了。但昆士蘭大學認為單純授權無法達到學校所期望的成果，因此昆士蘭大學便透過成立公司的方式落實研究成果商品化。商品化在澳洲各地逐漸形成一股風潮，而昆士蘭大學是落實研究成果商品化的佼佼者。

我今天要向各位報告的是我們在昆士蘭大學的作法、運用的策略、以及如何將授權的方式轉換成由利用公司將商品化落實的方式。首先，我要簡略介紹一下昆士蘭大學，各位可以把貴校和昆士蘭大學做一個比較。昆士蘭大學一年大約有六億的收入，學生有三萬二千名和約六千名教職員，研發經費的支出一年約為二億一千六百萬元，這資料可提供各位做為比較上的參考。

正如我剛才提到的，昆士蘭大學在 1995 年時基本上是採取非常傳統的授權政策，典型的做法是研究員提研究方案給大學評估，經過授權審核研究內容的商業潛力後，如果該研究內容通過測驗，測驗結果也顯示似乎某人肯讓他們「商品化」，學校便著手搜尋被授權人或商業合夥人，而後此科技將直接授權予該合夥人或公司。

這種方法有效地將科技運用在商業市場，但昆士蘭大學發現在過程中得到的收益相當少，主要原因在於從科技商品化到投資回報的等候期太久。這個圖表是我們一項生化科技技術的例子，各位可看到第一個專利權是在 1990 年提出申請，花了不少時間才逐步發展這項科技、提出幾個專利權申請、開始商業活動，五、六年後才完成授權，剛開始只能拿到一些小額授權費，真正大金額的回收要在未來的三到五年後才能取得。

大體而言，整個程序必須持續 20 至 25 年之久，從科技發明到運用到投資回收，得經過近 20 年的時間才看得到成果，這就是科技轉移一直存在的問題。你必須預支費用、支付專利權申請的費用、支付研究費用、為尋找商業合作夥伴支付所有商業活動費用。接下來，你只有等待這科技在市場上成為有實際銷售量的產品，賺取權利金以填補預支的投資，這是場長期抗戰。

這種科技轉移的難題讓昆士蘭大學開始研擬是否有更好的方法，可更快回收

投資，讓學校儘快獲得利潤。1995 年麻省理工學院發表的一項研究提供了我們一個好方向，當時麻省理工學院發現，該校 77% 的投資收益是來自授權成立新公司，而這些新公司僅佔所有授權比例的 35%，而且這些授權成立的新公司為該校科技研究增加出 70% 的就業機會，當然，大部分的新興公司都是當地靠近麻省理工學院的公司。

由這些數據推斷，站在當地社區的立場，當然成立新公司的策略比授權策略更有利，特別是像澳洲這種少有全球性跨國公司（除了採礦業之外）的國家更是如此。所以，正如各位所見，大多數最好的澳洲科技常常都是授權給海外的公司，利潤也要一段時間才會回到澳洲。

綜合以上因素，為了在敝校大力推展商品化，1996 年昆士蘭大學投入了五百萬澳幣，在科技商品化上首次改採新興公司的策略，成立 UniQuest 公司。成立 UniQuest 這樣的科技商品化公司需要經費，因為成立新公司策略所要求的技巧和經驗不像一般授權策略，它需要有更充分的流動資金及預備金。因為一般授權的策略，雖然要經過很長一段時間，待產品上市後，才会有較大的利潤回收，但通常可以要求先收取小額授權費，以維持科技轉移部門和商品化過程的運作。

但成立新公司的策略必須等上好幾年才能收益，在公司釋股前或公司獲利前根本沒有利潤，公司的資本額必須拿來支付一些不斷增加的費用，譬如法律費用、專業費用及行銷費用等。成立新公司比單純授權還複雜，需要更多律師、更多會計師等，因此支出相對也較高。最後一點，我想昆士蘭大學是冀望讓 UniQuest 可以自給自足，專利權的費用也由 UniQuest 來承擔。

此投資案於 1996 年著手進行，頭三至四年我們的重心放在新興公司的策略執行，我們相信策略的施行目前已達到相當完備的階段。實施的第一步就是為昆士蘭大學建立一個商業的組織架構，因此我們為學校的商業運作成立了昆大控股公司，而 UniQuest 是昆大百分之百資金投資的子公司。以昆大控股公司為工具，UniQuest 仍歸昆士蘭大學所有。之後還有一些公司從 UniQuest 分出，也是與 UniQuest 循相同的模式經營。

好的商業架構只是一個起點，下一步必須找出吸引研究人員或學校系院支持智慧財產權的鼓勵方法。昆士蘭大學當時明文規定與研究人員共享研究成果獎金，但獎金通常相當少，研究者根本不將之視為參與商品化的動機。所以我們又作了修正，叫做「三個 1/3 的劃分法」。基本上，收到商品化回饋時便先將成本扣除，（如專利權的成本）剩下的金額分成三等份：1/3 給發明者或研究者，1/3 給贊助該研究的學院或單位，另外 1/3 由 UniQuest 保留，以做為落實研究商品化之基

金。

這樣劃分的理由是為了鼓勵發明者，即科技創造者，支持並主動參與商品化的過程，因為研究者常常必須在發表研究成果和商品化之間作抉擇。許多前例指出，商品化時為了避免使專利權無效，不得已必須延遲發表的時間。再者，獲得系主任或主持專案的教職員之支持也是極重要的，如此他們才不會不斷地催促研究人員一面要發表，另一方面要善盡教職，才不致阻礙商品化活動，所以鼓勵相關系所也是必要的。

最後一點非常容易理解，UniQuest 及昆士蘭大學需要資金維持商品化過程。事實上，這種劃分法十分奏效。現在我們有一些專案正在進行，發明者也很積極參與商品化，他們也因此獲得超過 1/3 的回饋。

接下來，下一個重要的要件是建立團隊的能力，我們需要一群人能主動出擊攻佔市場，我們重組了一支在 UniQuest 裡負責科技商品化的團隊。這支團隊的特質如下：首先，我們認為成員必須具備相當的科技知識，他們必須能與研究者談話，與研究者同步運作以贏得他們的信任，有效地了解該科技並為此設計商業計劃及策略。

同時，我們任聘具商業資格的人才，有商業管理碩士學位的人正符合我們的需求，商業管理碩士的課程教授策略、會計、人力資源、發展及生產，至少必須懂得如何成立一個新公司及如何讓它起步。我們也尋找曾在跨國際公司工作的人才，因為我們打得正是一場國際性的仗，我們發現曾在海外工作經驗的人更容易適應這種環境。

我們也任聘曾任公司執行長的人才，我們發現曾任公司執行長的人擁有負全責的觀念，正如他們說的：「我會扛下所有責任」，也就是這樣的人才必須在公司裡推動一項計劃或科技，並驅策整個公司員工成功地完成該計劃或科技。以上就是我們在挑選這類人才時主要的標準，以利於打造 UniQuest 在新興公司策略中的能力。

大部分的成員都不是大學裡的招募來的，有一對夫妻檔員工曾任職於多所大學，進入本機構後才漸漸學得商業技巧。大體而言，僱用企業人士再訓練他們如何在大學的環境中工作會比較簡單。

在我們試驗的過程中另外一項主要的創舉稱為「中心網狀組織」。過去 UniQuest 是在一座建築物裡的核心團體，遵行授權策略，研究人員有新科技時才

會到 UniQuest 來。今天在新的策略之下，我們在每一個主要系所中安置一名人員，稱之為「發明暨商業發展經理」，他們的工作是找出發明、鼓勵發明，接著提出如何讓該發明商品化。此法也相當成功。

這些發明暨商業發展經理是由各系所、大學及 UniQuest 共同雇用，所以要是成功的話，每個人都可以分享成功的果實。經理視同系所的資深雇員，他們的辦公室一般是緊鄰院長或系主任的辦公室或在附近，他們也參加教職員管理會議，就像是商業顧問，也與研究員密切合作，領導研究商品化，走遍校園、發現新科技、推動專利權等過程都看得到他們的身影。

你或許可以想像這幾乎是二十四小時待命的工作，若手上正在處理一件商品化的案子，幾乎是得二十四小時投入工作中。我們也從經驗中得知，一個人一次只能處理二個商品化案子，最多三個，這已經夠他們精疲力盡了。為此，我們擁有一支強大的團隊，稱為「核心科技團隊」。這團隊的基地位於 UniQuest，只要教職員需要，他們就必須提供額外的資源幫助教職員完成一個案子。

教職員可能同時處理十、二十、三十、四十或五十多個計劃，但核心團隊的成員才是主要驅策計劃、包裝計劃、籌措資金的力量，他們一次只專注二至三個計劃。結果證明，在各系所的 UniQuest 人員所引導的研究計畫比各系所所提的研究要超過兩倍以上，可見這樣的安排效果相當顯著。

接下來我們就要建立及管理科技商品化的運作路線，我們將資料庫和一些管理會議統合為一個正式程序，各系所有任何剛萌芽的研究發現都會登記在此，每一件研究發現都清清楚楚地列出，經過精挑細選後，找出有商業潛力的研究發現，研擬研究計劃，並確認研究計畫如何落實商品化。

下一個重點就是提出專利權申請，專利權委員會有一個正式的程序撥款給每一個與研究員達成正式協議的專利權。研究人員有一份正式合約，確認如果獲得專利權，研究員同意發表研究成果，並支援商品化的過程。當然並非所有的專利權最後都獲得授權，或獲得公司的青睞，即便如此，在經過這一段篩選的過程，還是有一些交易完成，還是可以收取使用權利金。

並非所有的發明都適合新興公司策略，其實大部份發現根本不適合，所以我們仍維持雙軌的商品化管道，只有適合商品化的科技才採取此新法，其餘的仍採授權方式。事實上，我們手上的案子授權的比新興公司的多，授權還是可行的。然而我們也發現我們在授權的成功率比往常高出許多，也許是我們雇用的人比過去更有能力有關。

與其他國家或與澳洲其他地方比較，新興公司策略在昆士蘭的主要劣勢是，昆士蘭很欠缺投資資本。1988 年時，昆士蘭首次意識到其每人平均投資資本額是全澳最低的，與投資資本最高的美國比較更是望塵莫及，這是個相當嚴重的問題，因為投資者很少投資外地，他們喜歡可以隨時參訪他們投資的公司、參加董事會、方便隨時順路拜訪、審查他們的投資進行得如何。如果他們必須離開自己的辦公室一整天或搭飛機才能到達目的地，他們將為之卻步。也就是因為澳洲的投資資本不多，所以昆士蘭才有那麼少的投資資本公司。

為此，昆士蘭大學依照我們的建議與墨爾本大學合作，投入二千萬元設立種子投資資本基金。這個合作案發生的時機非常好，當時墨爾本大學有個非常有名的智慧財產權案子，相信很多在座各位都有聽過「墨爾本 IT」這個名字，雖然關於它報導有褒有貶，但對大學而言是個相當了不起的大事，這個智慧財產權案替墨爾本大學募得了約七千萬元。

墨爾本大學從當時計畫的獲利提撥一千萬做為商品化的投資金額，昆士蘭大學也把之前商業土地案子的獲利投入一千萬，於是雙方合作以研發更多類似的案子，當然彼此對投資商品化研究的甄選各有意見，也是一種截長補短的方式。

這種兩所大學的合作，又可避免常見的政治干預，因為大學資金的運用偶而會受到外來政治力的左右，有時這樣的決定往往是個糟糕的投資，但像這樣兩所大學的合作，任何投資都必須經另一方同意，便可以免去政治衝突或政治干預的可能性。

這二千萬元的資金是種子資金，每一個投資計劃最少五萬元，最多五十萬澳幣，其中有百分之九十的資金是來自昆士蘭大學或墨爾本大學，這很類似家園基金或專屬基金。正如我說過的，聯合投資委員會對案子的採用及成功與否關係重大。目前我們也已設立了一個補足基金的機制可提供五十萬到五百萬或六百萬的金額，此基金的設立目標是提升科技的初期價值，並為下階段的資金籌措作準備。

有了這項基金，我們相信昆士蘭大學具備了所有科技商品化成功的要件，UniQuest 裡有一個強大、有效率、資源豐富的商品化公司，也有支援新興公司策略的種子資金籌措。我必須補充說明，澳洲政府也非常贊同這種方式，於是成立一個稱為「種子前基金」的計劃，我想目前評估的申請案多來自私人機構，他們撥出約七千萬元支援政府出資的活動，因此可預期會有更多種子基金跟進。當然我們集所有昆士蘭大學優秀的研究於一身，等於擁有未來建立新興公司和授權的要件。

現在，讓我們來檢視成效。自 1995 年開始，我們已設立四十餘家公司。我必須聲明，任何投資有贏家也有輸家，這四十餘家公司仍在運作，但有些情況並不樂觀。不過，我們擁有一支由許多基本面很強的公司組成、持續在成長的組織，它已提出第二輪、第三輪、第四輪的資金籌措，甚至正在進行初次股票上市的行動，我們的前景看好。事實上，今年是所有投資完全成熟的第一年，我們會選個好時機將這些公司的股票出售，開始享受策略成功的果實。

UniQuest 成長的速度也是不同凡響，由 1995 年一千三百萬的收益，到去年我們達到四千七百萬元的收益，這段時期足足有 3.5 倍的成長！再者，約一半的收益歸到大學的帳戶下，所以昆士蘭大學當初五百萬的投資回報相當不錯。

總而言之，昆士蘭大學利用此策略，從五百萬投資到現在擁有新興公司為數不少的股票，可說是成果豐碩。我們已看出研究的資金明顯提高，大學可預期的收入也增加了，昆士蘭大學因而可利用其多樣的補助金機制彌補政府額外的資金籌措，過去五年，昆士蘭大學也免除給付專利權的費用及商品化的負擔。如果當時沒有 UniQuest 接手管理研究商品化的投資計劃的話，而按照舊有的做法來看，那段時期所花費的應該超過五百萬。

因此我認為，新興公司策略與單純的授權策略比較，絕對可以為大學創造更多機會和收入。

COMMERCIALIZATION OF UNIVERSITY RESEARCH ACHIEVEMENTS IN TAIWAN

Hong-jinh Chang
President, Tamkang University
Taiwan, Republic of China

ABSTRACT

In Taiwan, Republic of China, college and university research projects have as their major financial resources from the following institutions: Special Research Project Grant of the National Science Development Committee, Special Grant from the Advisory Office of the MOE (Ministry of Education), research projects entrusted by the industrial world or by the cooperation between enterprises and academic circle. In addition, some schools have allocated some budget either to defray their own research or to assist faculty in their research; and in the recent two years the MOE has allocated NT\$ 10 billion as special grant for those universities that have done outstanding researches; still some teachers do their own researches without any financial assistance from the outside world.

Among them those outstanding, innovative, and technologically advanced research achievements that can be utilized by industry after having passed the screening can apply for patents so as to protect the rights and interests of the project sponsor, the inventor, the creator, and the association. Moreover, through the transfer of technical skill, providing the local industries with the opportunity to use the skill can make technological achievements not only more practical but also developing in the industrial world; at the same time, the premium, derivative profits, and other benefits gained from the technology transfer can be repaid to the inventors and their affiliated institutions as well as to their manufacturers that are involved in the joint research. The commercialization of the research achievements come in the following forms: 1 Patents, 2 Transfer of Technology, and 3 Distribution of Rights and Interest.

On industrial-academic cooperation, the industrial world and the academic circle's mutual share of resources, mutual help, and reciprocating—the industrial world possesses much more fund and experience in transferring technical skills into products, whereas the academic circle owns much more teaching professionals and research talents, much more cross-field-of-studies research teams, and knowhow to provide the industrial world with inquiries and services. The R.O.C. government also has numerous measures to subsidize universities and colleges to promote industrial-academic cooperation. For example, the Bureau of Small- and Medium-sized Business of the Ministry of Economy, R.O.C., in its establishing “the second spring” of Taiwan's economy, encourages every academic institution to launch an Incubation Center (IC) and every year subsidizes each school's IC several million NTD (New Taiwan Dollars) to help its operation. Through industrial-academic cooperation by utilizing the school's existing research/development technology, experiment facilities, space and the experience of public services, the IC provides for the newly established enterprises or those who already have technology and are eager to set up their own enterprises a good working environment for their operation and cultivation, for decreasing their operating capital as well as risk, for accelerating the steps of the commercialization of technological products, and for promoting the small- and medium-sized business to upgrade and grow.

AUSTRALIAN TAIWAN CONFERENCE ON HIGHER EDUCATION

Professor Ingrid Moses

Vice-Chancellor & President, The University of New England, Armidale

Professor Moses is a Director of the Australian Universities Quality Agency and of IDP Education Australia Ltd. She is a member of the Council of the University of South Pacific, President-Elect of the International Association of University Presidents (IAUP) and becomes President from 26 June, 2002.

ABSTRACT

Internationalisation of teaching and learning can be looked at in a number of ways, in terms of students, in terms of the actual processes of teaching and learning, and in terms the curriculum.

Australian universities enrol over 100,000 international students. Three countries provide the bulk of the students: China, Singapore, Malaysia, with Indonesia in fourth place. From a slow beginning in 1989 Australian universities increasingly have been developing collaborative arrangements for the delivery of offshore programs through twinning arrangements, distance education or offshore programs. In 2001 there were about 850 such programs. Of these, nearly 300 are in Singapore, about 250 in China (Hong Kong) and nearly 200 in Malaysia.

All Australian universities have active formal agreements with universities overseas. The number of agreements signed rose from a few dozen in 1985 to close to 4000! Most are with universities in the US, but China and Japan also figure highly, followed by Thailand, Germany, Canada, Indonesia, Korea, France, Sweden, Vietnam and Malaysia.

The actual processes of teaching and learning, and indeed the curriculum provide us with difficult questions which we hope to explore in this session: What does it mean to internationalise the curriculum? What are the expectations of the Taiwanese employers, students and families of the students obtaining an Australian degree? To what extent do staff have to change their teaching styles? Do what extent should students adopt different learning strategies?

What are the quality issues involved from an Australia perspective, from an international and Taiwanese perspective?

Australia is very much aware of the necessity to assure overseas governments, students and their families of the high quality of Australian programs.

The establishment of the Australian Universities Quality Agency was partly driven by a perceived need to assure the world of our quality programs. National Protocols and University Acts demand that the standard of programs offered internationally be at least of the same standard as degrees offered on the home campus. How can this be ensured?



**TRANSCRIPT
OF PROCEEDINGS**

SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

MONDAY, 8 APRIL 2002

FOCUS SESSION:

TEACHING AND LEARNING - INTERNATIONALISATION

SPEAKER:

PROF INGRID MOSES

VICE-CHANCELLOR AND PRESIDENT

UNIVERSITY OF NEW ENGLAND, AUSTRALIA

PROF MOSES: I think our Taiwanese friends will have heard this morning that in Australia academic staff, including the senior executive, have a variety of accents - Irish, English, Scottish, South African, American - but I would be the only one who comes from a non-native English-speaking background, and I have profited from international education, because I was born in Germany and when I was a school student I won an exchange award and I spent a year in an American high school. It was that experience, I think, which for me, coming from a small town, made me aware of the enormous benefits of people spending some of their life in an alien environment and being a minority and not speaking the language but learning to speak it, and it was then, when I went to university, that I became involved in international affairs in my university in Germany. That's how I met an Australian student whom I then married, and that's how I got here. Also, I studied in Australia and both my master and my PhD are from the University of Queensland where, fortunately, being an Australian resident by then and before the introduction of fees, I didn't have to pay an overseas student fee. I only became an Australian citizen in the middle nineties.

Globalisation has fervent followers and passionate objectors. Internationalisation is generally seen as a good thing. We all believe in internationalisation. Indeed, we think we have been practising it in Australia with our staff and student recruitment, our staff and student exchanges, sabbaticals overseas, overseas visitor schemes, quite apart from all of the research-connected practices which have been part of the quality assurance in Australia, namely that you prove that you are acceptable, that you are part of the international community.

But the concept "internationalisation of teaching and learning" is much more complex than it sounds. Internationalisation of teaching and learning can be looked at in very many different ways. I want to look at it in terms of students and staff, in terms of actual processes of teaching and learning, and in terms of the curriculum, and I will say a few words about quality. Let me begin with students and staff.

This is an AVCC overhead and they hadn't yet done 2001, but in 2001 we have shot even further up. You can see that over the last 16 years there's been an exponential growth of international students at Australian universities - dramatic. It has been driven by active recruitment but it is also because English has become such an important language worldwide, and we of course teach in English, though I gather the British Council has some problems in recognising it. They see themselves as a country which represents the English language.

Here we have international higher education students by country, and you can see that China, Singapore and Malaysia are really the main source countries. You can also see that Taiwan is very, very small indeed in terms of Taiwanese students coming to Australia. As you all know, it's been the US mainly where people got certainly their graduate qualifications, and we do hope that this conference and our agreements will lead to greater student exchanges between

Taiwan and Australia.

When we look at student exchanges, you can see that we are sending students but we are receiving quite a few more. It has something to do with language. My own university, for instance, teaches French, German, Italian, Japanese, Chinese, Indonesian and Classical Greek, and our language students have to go to the country where it's spoken as a native language, and they do, but our commerce students, our law students, our science students don't go. This is to us a great worry, because we do think they would benefit just as much, but they haven't got the language mastery in the other language of the host country.

We are receiving very many more, from our partner universities for instance, and to my university - and it would be the same across Australia - students from all sorts of discipline groups come, and then they learn in English because they have had better language training in their home country. They speak English at a level where they can actually participate in the subject matter, and our students cannot do it in the other languages.

Australian universities, again over the last 16 years, have really built up their relationship with foreign universities. And Taiwan is an island: we always talk about "overseas" because everyone is overseas! You can see that in 1985 there were very few formal agreements. There were a lot of informal interactions because people would go on a sabbatical and visitors would come, but there were very few formal agreements. Now, it is sort of slackening off at the moment because most universities don't want agreements which are not alive. They want to have agreements where staff and students go and visit each other, where there is research cooperation, where there might even be joint teaching and learning. So most universities evaluate their memorandum of understanding. Is it alive or not? And if it is not alive, it is probably not going to be renewed.

Here we've got the formal agreements by country and you can see that the US figures very highly. The US and UK are the traditional countries, where Australians also went for graduate study. But China and Japan have really shot up enormously. Of course, they are relatively close neighbours to us - relatively; no-one is really close. Now, Taiwan as yet doesn't figure, but then one does have to be realistic, too, in terms of the population and the number of universities in the country, and quantity is not the same as quality either, so we do hope that we will have, as an outcome of this conference, more formal agreements which will be alive with Taiwanese universities.

Clearly, then, judging from those figures Australia is a major player in international education, ranked third behind the US and UK in terms of absolute numbers. However, when we look at international students as a proportion of the total student population, then Australia has by far the largest proportion. Over 15 per cent of our students are international. Not all universities aim to have a very large proportion of their students international, but two universities have 30 per cent or more of their students from overseas in 2001, four more between 20 and 25 per cent, but the majority between 10 and

20 per cent. It doesn't really matter which the universities are, but you can see the range, and here we have over 30 per cent. That is a very large number indeed, and that is Central Queensland University.

Some universities consider what the optimal level of mix might be in order to foster an agenda of internationalisation, namely being familiar with and open to cultures and issues in the world. Others recruit regardless and hope to maximise their income from international students. It's become an industry, which is very different from the way it started. One would expect that the huge proportion of international students would have an enormous impact on the home campus and on teaching and learning - that is, if the students are actually on the home campus in Australia - and 72,000 were students in Australia in 2000.

But, while some universities have the majority of their international students on campus to mix with the Australian students, others teach international students predominantly off campus in separate centres in Australia or offshore, and that in itself is something which is worth discussing in terms of the desirability or the internationalisation effect. Indeed, the offshore student numbers have increased dramatically, from over 16,000 in 1997 to close to 35,000 in 2000. So while overall the international students have increased in numbers, the most dramatic increase has been in the offshore programs. Again, if we look at countries, we can see that it's really just three countries which dominate, which are Singapore, China and Malaysia, in terms of offshore programs, and of course Singapore and Malaysia themselves want to become education exporters.

What about staff? Unfortunately, I have no data on the national background of academic staff, but traditionally Australian universities have recruited academic staff internationally. Australian universities have complete autonomy in staffing matters. Our staff are employees of the university. They are not public servants. They are not state employees. The university decides whom they employ and at what rank. And the Australian universities recruit where they believe they can get the best people, and the best people which they can afford. We heard a few things about salary and taxes this morning, and Australian universities do find it hard to be competitive with some countries and in some fields because we are not paying enough.

All Australian universities would have a significant proportion of staff from the UK, USA, Canada, New Zealand, from the Indian Subcontinent and elsewhere in the Commonwealth where English is in use in higher education. In addition, many Australian-born academic staff would have graduate qualifications from the UK, the USA or Europe. But universities also recruit non-native English speakers like myself. In my university, for example, in 2001 about 22 per cent of academic staff came from racial, ethnic and ethno-religious, and about 14 per cent have a first language other than English.

Internationalisation of academic staff, of course, is a two-way process. We recruit internationally, but we also encourage our staff to spend study leaves

overseas and we invite staff from partner universities to spend time in our institutions. We value the different viewpoints; the different or complementary research agendas; the increased knowledge of staff of intercultural differences; the increases, we hope, in cultural sensitivity.

This is data on university agreements involving staff exchanges, and again you can see that that has increased enormously. In my own university, I try to encourage people to go to partner universities, so while all of the Australian universities give an allowance to staff when they go on sabbatical, we put in an extra \$1,000 or so if they go to a partner university, just to make sure that the relationship stays alive.

I want to say a few words about curricula and the process of teaching and learning. Internationalising our teaching and learning, internationalising the curriculum, is far more controversial than international staff and student recruitment or exchanges. Does internationalisation mean homogenisation of the curriculum or does it mean that a national curriculum includes perspectives which relate to the international students' own context?

When students from Taiwan come to Australia to study, do they, do their parents, do their employers, expect that an Australian degree has an Australian focus, is based on the same curriculum for all students whether international or not? Indeed, are they hoping for a deeper understanding of and accreditation in a specific national curriculum or do they expect cultural attunement and acknowledgment, for example, of Taiwanese society, business, culture? Does it make a difference whether students come here from other countries and learn with Australian and other international students or whether they are studying for a foreign degree but in their own country, like those offshore students?

Australian universities are bound by guidelines and legislation to offer degrees which are of the same standard as the home degree when delivered offshore. When the students study offshore in their home country, is it expected, is it acceptable, that the course content is Australiacentric? Or should examples, case studies, be used from the students' own experience and context? There is a notion that academic programs for international students need to be respectful. For example, in a research course this would mean that the program - and I quote from one of our staff, from his proposal - "does not presuppose answers lie in the host country but rather answers to research questions are identified and worked on in the country of origin of the students".

For research programs, this is now widely accepted, but it wasn't always in the past. But for undergraduate degree coursework programs there is less of a consensus. This morning Deryck Schreuder from the AVCC spoke, and the AVCC has a whole lot of guidelines which are sometimes called COTE, but they are not binding like in a professional association. Universities develop them and they adopt them and they try to adapt them to their own context.

Recently the AVCC released this code of practice. Is it in the satchels? If not, you should really have one. It's Provision of Education to International

Students Code of Practice: Code and Guidelines for Australian Universities. It does not address the issue of internationalisation. Only one reference is made, under "Student Support", which supports the notion of contextual relevance, and that is:

Universities should ensure that international students not only gain an understanding of their discipline and associated studies in an Australian context but also, where possible, be given the opportunity to relate these studies to their home environment.

Nevertheless, Australian universities have, over the past decade or so, been internationalising the curriculum in a number of ways, among them by introducing additional international content into courses, comparative and cross-cultural approaches, language and area studies, interdisciplinary programs covering more than one country, joint degree courses involving a professional course linked to an international studies or language course, courses taught in part overseas or involving a study abroad component, a placement in an overseas organisation, or an international study tour, and courses using visiting academics from overseas, and this is taken from a study by Hans de Wit on Strategies for Internationalisation of Higher Education. This was the Australian case study.

IDP Education Australia surveyed in 1995 the 38 Australian universities about curriculum development initiatives towards internationalisation. Over 1,000 different initiatives were reported back, and by now there would be very many more, except we haven't got an update of this study. Here you can see the sorts of initiatives which were taken in the universities in their attempt to internationalise the curriculum. The biggest one was:

- *Curricula which prepare students for defined international professions.*

Others were:

- *Curricula leading to internationally recognised professional qualifications.*
- *Curricula leading to joint or double degrees.*
- *Curricula in which compulsory parts are offered at universities abroad, staffed by local lecturers.*
- *Curricula with an international subject.*
- *Interdisciplinary programs, such as region and area studies, covering more than one country.*
- *Curricula in which the traditional or original subject area is broadened by an internationally comparative approach.*

- *Curricula in foreign languages or linguistics which address explicitly cross-communication issues and which provide training in intercultural skills.*
- *Curricula in which the content is especially designed for foreign students.*

As you can see, within the Australian context then, that was a very, very small minority. On the whole, these courses were for international and Australian students.

Another contentious issue is the question of language of instruction and assessment. In many Asian and European countries, universities offer some courses in English. They have introduced these mainly to attract international students who do not have the language background to participate in courses taught in the language of the host country. It comes back to the fact that language students are happy to travel; others are not. So if we want our engineering students to go, they will only go to a university in another country if there is a course taught in English. This is happening all over Europe, at least, and certainly also in some Asian countries.

In Australia, on the whole, the language of instruction, other than in language teaching, is English, but if we teach in China, could we offer an Australian degree taught in Mandarin or Cantonese? Do you expect an Australian degree to be taught in English or does internationalisation mean a degree can be taught in a language other than that of the university's own country?

We know that teaching conventions vary from country to country. Do we internationalise teaching methods or is it acceptable that lecturers use the teaching styles they prefer, regardless of whether students can actually learn in that way-of-teaching environment? Is it expected that assessment tasks are the same here as offshore, that the expectations of how students learn are shaped by Australian students' approaches to learning? Or do we accept that our teaching staff do have some knowledge of different learning styles and adjust their teaching, regardless of whether they teach international students here or in the students' home country? Is there an international currency in teaching and learning?

I note that other sessions in this conference, in this stream here, will address issues in online learning and lifelong learning. Both are very important for internationalisation of teaching and learning. The increase in international alliances, like Universitas 21 global alliance and others, I expect will point to new ways of internationalising teaching and learning, but we haven't seen it yet.

I want to say a few words about quality assurance. Australia is very much aware of the necessity to assure overseas governments, students and their families of the high quality of Australian programs. The establishment of the Australian Universities Quality Agency was partly driven by a perceived need

to assure the world of our quality programs. That notion of universities being self-accrediting institutions is pretty meaningless in very many parts of the world, and they do look for either a government or some other nationwide organisation which assures quality.

Indeed, the national protocols for higher education approval processes devote considerable space to courses for overseas students, and Dr Shergold this morning was referring to them. These are the national protocols:

Background: It is the state and territory governments' responsibility under the Commonwealth Education Services for Overseas Students Act to endorse courses of study as suitable for overseas students -

and that is needed for the purpose of issuing visas to students. But:

This endorsement should only be given where the endorsing authority has confidence that the courses concerned are offered at a standard equivalent to other programs of similar kind, that facilities and services are of adequate standard, and that the organisation providing the program has the financial and other resources to ensure full and effective delivery of the program -

and this is a very important safeguard for the quality of teaching and learning. Then the italics is a direct quote. This is taken from the national protocols. If a university is operating overseas and issuing an award under its own name, like in the offshore programs, the national protocol is:

... the council or governing body of the university or other institution is responsible for quality assurance and will be subject to audit by the AUQA -

the Australian Universities Quality Agency.

For overseas campuses the institution will be expected to maintain standards at least equivalent to those provided in Australia regardless of any specific requirements of overseas governments.

And:

If the university operates through another organisation and the university or other self-accrediting institution is to grant the academic award, the relationship will be construed as one of principal and agent.

That is very legalistic language, of course.

The principal in this relationship must carry full responsibility for all aspects of delivery, including quality and standards comparable

to those on other campuses of the institution, teaching by staff qualified at a level comparable to those on other campuses of the institution, resources and facilities adequate for the delivery of the course, and adequate measures to protect the welfare of students.

Again, what we do to ensure standards is subject to audit by AUQA. It seems to me, then, that there are government and university guidelines in place, quite apart from universities' own concerns about their reputation for quality and excellence and standards, which should ensure that internationalisation in teaching and learning advantages and enriches students educationally, but there is still no consensus of whether we need to find a common international curriculum or not.

Personally, I believe we do not. Diversity, choice, experiences of the unknown, enrich us. Perhaps we can learn from a very successful international venture at high school level: the International Baccalaureate. Their brochure quotes Roger Peel, director-general from 1983 to 1998:

The honesty of the International Baccalaureate stems from the fact that we require all students to relate first to their own national identity, their own language, literature, history and cultural heritage, no matter where in the world this may be. Beyond that, we ask that they identify with the corresponding traditions of others. It is not expected that they adopt alien points of view, merely that they are exposed to them and encouraged to respond intelligently. The end result, we hope, is a more compassionate population, a welcome manifestation of national diversity within an international framework of tolerant respect. Ideally, at the end of the IB experience, students should know themselves better than when they started, while acknowledging that others can be right in being different.

I think if they can do that at high school level, we can do that in the universities.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002 年 4 月 8 日（星期一）

專題討論

教學與學習－國際化

演講者

澳洲新英格蘭大學校長

INGRID MOSES 教授

我想我們的台灣朋友在今天早上的會程中，將會聽到澳洲學術界同仁，包括高層長官，許多不同的英語口音，像是愛爾蘭、蘇格蘭、南非和美國等，而我則是這眾多講者中唯一母語不是英語的講者，但是拜教育國際化之賜，我獲益良多。我出生於德國，唸高中時，取得了交換學生獎金，因此在美國的高中讀了一年。或許就是當時的那個經歷，讓來自鄉下小鎮的我，意識到花點時間到全然陌生的環境，在那裡不但成為少數民族，還要學習不熟悉的外國語的經歷，對自己本身是多麼地有益，當我回到德國念大學時，我就開始在校內從事國際事務的活動。也因為這樣，因緣際會下，我認識了我先生，不然我今天也不會在這裡。而且，我碩士和博士的兩個學位是在澳洲昆士蘭大學完成的。很幸運地，我那時已取得澳洲居留權，所以，我的學費不用比照國際學生全額付費。一直到九十年代中期，我才正式成為澳洲公民。

對「國際化」，正反的聲音一直不斷。然而，大部分的人都視其為一件好事，而我們也都抱著支持的態度。其實，澳洲在許多方面都朝國際化推動，包括教職員招募、招生、海外交流計畫、教職員海外支薪休假，國際人士訪澳計劃等。這些與研究相關的事務都有品質保證，所以，只要證明有心接受，就是國際社會的一份子。

然而，「教育國際化」並沒有想像中的簡單，我們可從許多不同方面來探討。今天，我想就從「學生與教職員」、「實際教學與學習現況」及「課程安排」方面來說明，然後，我還會談到一些關於「品質管理」方面。我就先從「學生與教職員」來說好了。

這是澳洲大學校長委員會的投影片，2001 年度的還沒有完成，但我們國際學生的人數在 2001 年增加很多。你可以看到過去 16 年來，前來澳洲就讀的國際學生人數成長快速，挺驚人的吧！這是因為我們一直積極主動地招生；此外，也正因為英語已儼然成為全球重要的溝通語言，而且我們是用英語來教學的。這方面，我想負責在海外推廣英國文教的「英國教育理事會」可能會不太認同，大概因為他們認為英國才是英語的代言人吧。

這裡我們可以看到有來自各國的高教學生，你可以看出中國大陸、新加坡及馬來西亞在這些學生中佔大多數。你也可以看到台灣所佔的比例非常、非常的少。誠如你們所知，美國一直是大都數人攻取碩、博士的國家，我們真的希望藉由這次會議以及我們所簽訂的協議，能促進更多台灣、澳洲雙方的學術交流。

在國際學生交流方面，我們派出的學生很多，然而，來澳當交換學生的人數

更多，我想是語言的原因吧。以本校為例，我們有法、德、義、日、中、印尼、古典希臘語等語言課程，我們規定這些學生一定要到這些語系的國家交換就讀，他們也這麼做了，但我們商學院、法學院及理工學院的學生卻沒有。這令我們相當憂慮，因為我們也冀望他們能藉此獲益良多，但他們除了英語，不太會說其他語言。

我們學校從各姊妹校所收到的學生身上得知，整個澳洲的情況都是如此，這些從各領域來的國際學生必須要用英語學習專業，而之前他們在自己的國家就讀時就已經受過良好的語言訓練。所以，他們英語的溝通能力足以讓他們在學習專業時沒有障礙。相對地，我們澳洲大部分的學生就不具備其他的外語能力。

過去 16 年來，澳洲的大學一直和其他外國大學建立了良好的關係。台灣是個島國，我們不斷提到「海外」這個詞，因為所有的外國都是在海外！你看在 1985 年時，很少有締結正式的協議，反倒是有許多非正式的互動交流，因為有人會在留薪假期間出國，同時也會有國際人士來訪，但是卻極少有正式協議。現在，這些契約關係有些鬆弛，因為大部分的學校不想要有名無實的協議關係，他們希望有名有實的關係，讓教職員與學生可以彼此互相交流，可以進行合作研究，或甚至是協同教學。所以，大部分的大學會評估他們和國外大學的協議，到底是不是有名無實？假如是有名無實的，大概也不用續約了。

這是澳洲和各國取得正式合作與交流協議的資料，你們可以看到我們和美國合作與交流的比例相當的高。美國和英國是公認具有學術傳統的國家，許多澳洲學生也會前往就讀研究所。但中國大陸和日本與我們互動比例也成長的很快，比較上來講，這兩個國家的地理位置離我們較近，當然也不是真的近到連在一起。台灣和我們互動的比例目前沒有統計數字，主要是很難用目前台灣的人口比例與學校數目來評斷質量，因此，我們真誠盼望這次會議之後，我們能夠和台灣的大學締結更多的正式協議，並且讓它們活絡不斷。

在這些統計數據中，可以很明顯地看出，澳洲在教育國際化方面扮演很重要的角色，目前是排名第三，緊接在美國、英國之後。然而，從國際學生在總學生中所佔的比例來看，澳洲比例最高。我們的學生中，有超過 15% 是國際學生。其實，並非所有的大學都朝向讓國際學生比例提高的方向走，但是在 2001 年，各校的國際學生比例上有兩所佔 30% 以上，四所約 20%~25%，而大多數大學的比率為 10%~20%。不管這些是哪些學校，但你可以看到這比例的範圍，在這裡，中昆士蘭大學超過了 30%，那比例確實很高。

一些大學認為達到這樣的最佳比例可能是為了促進國際化，也就是說要接納

及熟悉世界其他的文化與議題。然而，有些學校只希望藉由提高國際學生的比例以增加收入，變成商業化，這實在有違最初教育的原意。2000 年時，就有七萬二千名的海外學生，如果這些學生都在澳洲境內校園就讀的話，這麼高比例的國際學生勢必會對澳洲本土的教育方面產生很大的衝擊。

當國際學生比例在一些大學佔有相當多比例的同時，其他的教學機構也在大學分校收了很多的國際學生，包括在澳洲境內及境外的分校，會有這種現象發生是因為他們想這麼做以及國際化的趨勢所趨。其實，在這些海外分校所收的國際學生人數也成長地很快速，從 1997 年的一萬六千多人增加到 2000 年的近三萬五千人。所以就國際學生的總數來看，人數是增加了，但其中成長最劇的可算是澳洲大學在海外提供的學(課)程。倘若我們再看看學生來自海外分校設立的國家，主要三個國家為新加坡、中國大陸及馬來西亞。其中，新加坡及馬來西亞一向鼓勵學生出國求學。

那大學教職員方面呢？很抱歉，我手邊沒有任何大學的老師國籍背景資料，但澳洲的大學一直都在國際間甄聘教師，每所大學在教師徵聘方面都有相當的自主性。我們的教師都是各大學所雇用的，不是一般的公職人員。學校可以決定要聘僱誰及其職等。而澳洲的大學知道在哪裡可以聘僱到最適任而且又聘得起的最佳人選。今天早上，我們已聽到一些關於薪俸及稅率的相關議題，在這方面，澳洲的大學確實發現要和某些國家爭聘某些領域的人才實在有些困難，因為我們付不起那麼高的薪俸。

所有的澳洲大學在教師甄聘方面，絕大多數都是從國外甄聘，其中包括英國、美國、加拿大、紐西蘭、印度及其他大英國協的國家，這些國家的大學都是使用英語。此外，許多澳洲出生的大學老師也都獲有英國、美國或歐洲國家的碩、博士學位。然而，澳洲大學仍然會聘用母語不是英文的教師（像我本人）。以我任教的大學為例，2001 年時，約有 22%的教師來自不同的種族、民族及宗教背景，而約有 14%的人母語不是英語。

大學教師甄聘的國際化其實是雙向的。一方面我們全球性地廣聘教師，另一方面，我們也鼓勵我們的同仁能在留薪假期間到海外從事研究，我們也邀請各姊妹校的老師來澳洲。我們重視各方面不同的看法、不同或增補的研究議程、不同文化所學到的新知。希望這些附加價值，能增加對文化的敏感度。

這是與國外大學教師交換的數據資料，你可以看到成長相當迅速。在我任教的大學內，我常鼓勵同仁們到各姊妹校去當交換教授、進行交流，所以除了和澳洲各大學一樣提供津貼補助之外，對於在留薪假期間，願意到姊妹校從事研究

者，我們學校也提供每月 1000 元的額外補助給這些同仁。這些都只是想確立我們與各姊妹校的活絡關係。

接下來，我想談一些有關課程與「教學與學習」的流程。「教與學的國際化」、「課程的國際化」，遠比「師生交換的國際化」更具爭議性。國際化的意思是指將課程統一化嗎？還是在課程安排上要顧及各國際學生的國籍文化背景呢？

當學生從台灣遠赴澳洲求學時，他們自己本身，父母，老闆所期待的澳洲學位課程安排上是要國際統一化還是要隨各差異性而調整？他們是希望對某個特定國家課程上求更深層的認識與認同？或是他們期待的是對文化一般的知識，例如，台灣的社會、商業、文化？對學生來說，從祖國遠赴澳洲和其他人及其他的國際學生一同學習，或是如同與那些海外分校的學生一樣，就在祖國內修得國外學位，這兩者的感覺、意義有何不同？

根據法律規範，澳洲大學有義務提供海外分校與澳洲大學學力相等的學位要求標準。但是，當國際學生在其祖國內的海外分校就讀時，其課程內容與澳洲相較後，可被接受嗎？是相同的嗎？還是根據學生自身的經歷及背景，在課程安排上用範例及個案研究呢？有一派說法認為對國際學生的課程安排上需要採取尊重的態度。舉例來說，在一項研究課程中，我引述一位同仁提案裡的一段話來解釋：「不要用自己本身國家的觀點事先預設好答案，而是要和那些來自該國的國際學生探討、研究出答案」。

至於研究國際化計劃方面，現在是普遍可以被接受。在過去，情況可不一定如此樂觀。然而，在大學部課程計劃方面，尚未完全達到共識。今早，澳洲大學校長委員會的 Deryck Schreuder 演講時提到，澳洲大學校長委員會內有一堆的指導準則，有時會統稱 COTE，但也不用把這些指導準則規定和專業協會區分不同。學校們應訂立、採用這些準則並且適應國情，斟酌調整。

最近，澳洲大學校長委員會發行這本施行準則手冊。各位手上有沒有？假如沒有，那你真該有一本。那是教育條款中澳洲大學對國際學生的施行準則，內容並沒有提到國際化的議題。只有在「支援學生」名詞的上、下文中談到相關的觀念：

大學需確保國際學生，對他們所學的領域及相關研究有進一步的了解，以澳洲文化作為應用，若可能的話，要讓他們有機會進行與祖國相關的研究。

不過，大約在過去十年來，澳洲大學一直透過許多方式，將整個課程國際化，

其中範圍包括：在課程內編入國際性的內容、以相互比較與跨國文化方法來研究、語言與領域研究、多國的跨學科課程計劃、涉及國際研究或語言課程的專業聯合學位課程、部分國外學習課程或國外留學綜合課程、國外機構的實習工作、國外遊學及由國外客座教授指導的課程等。這份資料是從 Han de Wits 以澳洲為研究主題的高等教育國際化策略摘錄出來的。

在 1995 年時，澳洲大學聯盟（IDP Education Australia）對澳洲三十八所大學做了課程發展國際化的調查，當時收到一千多份不同的報告，現在資料應該更多，不過我們還沒更新統計。在這，你可以看到我們從這些報告中選出來的各校對課程國際化的安排。排名第一的是：

- 訓練學生達到國際專業的課程。

其他的有：

- 培養國際認定專業證照人才的課程。
- 鼓勵修習聯合學位或雙學位的課程。
- 澳洲境外分校提供由當地講師授課的必修課程。
- 國際議題的課程。
- 跨學科課程計畫，如地區配合相關領域研究，對象則不只單一國家。
- 藉由國際間相互比較的研究方法來擴展傳統或原始的學科課程。
- 以外文清楚地教授跨國溝通議題，而其中也提供跨國文化技能訓練的課程。
- 為海外學生特別量身設計的課程。

誠如你所看到的，以澳洲文化為主的課程算少，這些課程都是為國際及亞洲學生所設計。

另一個頗受爭議的議題是教授語言與整體評估的問題。在許多亞洲與歐洲國家中，大學都會安排以英語來教授課程，目的是為了透過這種方式來吸引不會講當地母語的國際學生。結果卻吸引到語言學院的學生，其他學生卻沒有；倘若我們要工程學院的學生出國留學，他們也只會去以英語上課的大學。這種情形在歐洲到處可見，而在部分亞洲國家也是如此。

大致來說，在澳洲，我們以英語授課。但是我們若在中國大陸開課的話，我們所提供澳洲學位的課程，可以用普通話或廣東話來授課嗎？你們認為一個由澳洲授權提供的學位，應該是用英語來教授？還是說學位國際化是可以別語言取代該大學的母語來教授？

我們都知道每個國家的教學慣例、方式都因環境而有所不同。但我們的教學方式有國際化嗎？還是說講師們可以採用他們自身認為好的教學方式、風格來教授，而不管學生是否真能在這教學環境下學到東西呢？至於整體評估方面，海外的分校和澳洲本國內大學的評估是一樣的嗎？海外學生在評估上的標準和澳洲學生一樣嗎？對於我們教員隨著環境來調整教學，我們接受嗎？在教學上，是否符合國際主流呢？

在這次的研討會中，我注意到其他的探討主題，也會談到線上學習與終身學習，這兩者對於教育國際化相當重要。國際教育聯盟的增加，例如全球 21 所大學聯盟及其他的聯盟等，我想他們會陸續提供國際化教育新方法，只是現在還未看到成果。

接下來，我想談的重點是教育品質保證。澳洲當局非常了解海外政府、學生、學生家人們對澳洲學校在課程安排的品質上非常重視，澳洲大學品質管機構就是因應對澳洲教育品質保證的需求而設置。在許多國家，大學自我認可與評鑑的機制是沒什麼意義的，但這機制對澳洲而言卻可以確保其教育品質。

在法律方面，高等教育的全國教育議定書(national protocols)也代表對海外學生課程方面的努力，今天早上，Shergold 博士也有提到全國教育議定書，以下是全國教育議定書的本文：

背景：在聯邦海外學生教育服務法案 (the Commonwealth Education Services for Overseas Students Act) 下，各州政府有其義務及責任為海外學生課程設計及安排。

學生簽證依此規定核發，而前提是：

提供海外學生課程的機構必須對該課程背書，以確保該課程的水準與其他機構類似課程同等，其教學設備、設施要符合標準；且該機構必須提出足夠的財力及資源計劃以保證課程的完整性及可行性。

這對教育品質的把關相當重要。斜體字部分都是協定的本文內容，全都是從全國教育議定書中節錄出來。倘若有澳洲大學設立海外分校並以其學校名義授予學位，像是海外分校的課程計劃等，全國教育議定書的相關規定則如下：

．．．凡是澳洲大學及學院的相關分校或校務會都有義務及責任保證其教育

品質，並接受澳洲大學品管機構的監督及控管。

AUQA 就是所謂的澳洲大學品管機構。

對於海外分校校園設施，必須至少要和澳洲大學一般標準保持相同水準。

並且：

倘若該海外分校透過其他機構、大學或其他立案的私人教育機構來營運並授予學位，這將視為是當事人及代理的關係。

這些用語當然都是非常法律條文式的。

該關係中的當事人必須對執行的一切情況負起全責，包括品質與水平、教學師資、學校資源及適當設備、保護學生的福祉等都要和其他同性質的學校媲美。

同樣地，教學品質由「澳洲大學品管機構」來負責監督及控管。我個人認為，政府與大學都有指導方針可循，除了學校本身關心自己在教學品質上卓越的信譽保證，同時也應該確保教育國際化及學生受教權的品質。然而，對於是否訂定出一套共用的國際化課程卻仍未達到共識。

我的看法是，不應定出一套共用的國際化課程，對未知所產生出的多元性、選擇權及累積的經驗將會讓我們受益良多。或許我們可以從 International Baccalaureate 高中的成功經驗中，為自己探索出一條成功之路。他們宣傳手冊，摘錄了羅傑·皮爾(從 1983 年至 1998 年擔任該校秘書長)的話：

International Baccalaureate 高中的理念是要求全體學生，不論你從哪個國家來澳洲求學，要先認識並了解自己祖國的國家本質、語言、文學、歷史與文化資產，進而要求和他國傳統尋求共通點。不期望他們會採納他國的觀點，只要他們多接觸和主動回應他們的想法。我們期望達到的結果是教育出充滿熱情的一群人，經過國際尊重、包容洗禮而代表國家多元化的一群人。最終的理想是，透過國際貝卡洛里埃特高中的經驗，畢業的學生能比入學前更認識自己，而且也能認同別人的不同。

我想假如他們高中能，我們大學為什麼不能？

INTERNATIONALIZATION -- A SUPREME POLICY OF THE TECHNOLOGICAL AND VOCATIONAL EDUCATIONAL INSTITUTIONS IN TAIWAN

Shan-Da Liu¹ and Yuan-Kuang Guu²

National Pingtung University of Science and Technology (NPUST)
Pingtung, Taiwan

1. President, NPUST and ATVE*
2. Director, NPUST Office of Technology Cooperation

ABSTRACT

As a new member of the World Trade Organization (WTO), "education for internationalization" and "internationalized education" have become the two hottest topics in Taiwan when measuring the needs and impacts of multi-national inter-dependency. Thus, "internationalization" has subsequently been the mainstream in most of the higher institutions of technological and vocational education (TVE) system. The phrase, "education for internationalization", is related to the reinforcements of TVE educations and trainings not only on the professional and technical aspects, but also on how to cultivate the students with more abilities and wider visions for facing the challenges of internationalization. The other phrase of "internationalized education" is dedicated to evaluating the upcoming impacts when foreign institutions are allowed to have branched campuses in Taiwan, and recruit students in competition with the local universities. And on the other hand, exporting Taiwan TVE experiences to other countries is also included implicitly.

For realizing the incoming WTO impacts, proposing feasible strategies, and implementing action plans, the Department of Technological and Vocational Education (DTVE) has started several projects four years ago. The scopes cover investigating the current status of international collaborations of the TVE higher institutions, organizing an advisory committee and a working group, establishing a website for promoting, providing financial supports for international collaborations, and so forth. Investigation has shown that, with all the DTVE efforts in the past four years, the concept of internationalization has been rooted on the earth of TVE higher institutions. Statistics evidences that the number of projects applying for financial supports increases from 38 to 114 in the period of 2000 ~ 2002, and the total amounts subsidized to the projects increase accordingly from 7 to 45 millions NTD. Therefore, activities initiated by the higher TVE institutions including exchanges of professors and students for teaching and research, media and visits, co-sponsored international conferences, and cooperative researches projects have been drastically increased.

A recent project proposed by DTVE and organized by NPUST is the conference entitled as "the 2002 International Conference on Technological and Vocational Education Amongst the Southeastern Asian Countries". Objectives are to learn the specialties of the TVE system of each participating country, exchange and share TVE experiences, exploit the workable collaborative possibilities, etc. Its ultimate goal is to organize a regional consortium for technological and vocational educations for the new era. Missions, organization and operations of this consortium are still undergoing development, and will be further discussed with the representatives, invited governmental officers and scholars from foreign countries.

NPUST, appointed by the Ministry of Education (MOE), Taiwan, as the working group for promoting international cooperation, has been playing an active and important role for helping other local TVE higher institutions on this assigned mission. It also outreaches to the areas of Africa, the Central and South America, the Caribbean, and the Southeastern Asia. Students from these areas are provided with full NPUST scholarship for pursuing master and doctoral degrees. Instructions are all in English, which is also the first example amongst the Taiwan universities. In addition, a "NPUST Center of Excellence", established by the co-sponsorships of NPUST, five US universities, Taiwan's MOE, COA (Council of Agriculture), EPA and USDA, USAEP/USAID, and designated for developing and transferring technologies for livestock waste management among countries of the Asian Pacific region, is serving as the best model for internationalization, and will be addressed in the presentation.

* Association of Technological and Vocational Education, Taiwan

General Background

Taiwan officially became the 144th member country of WTO on January 1st, 2002. The membership entitles privileges and obligations to each member country for free trades and open markets, which includes activities of educational services, economic operations, so on and so forth. Before being a WTO member, surveys of the anticipated impacts on local educational institutions and policies have been conducted several years ago by the Ministry of Education (MOE), Taiwan. Two important findings were concluded as the impacts of “internationalized education”, and how to enrich the educational and training programs in response to the needs for “education for internationalization”. In order to arouse the attentions and promote the awareness of internationalization, the Department of Technological and Vocational Education (DTVE) of MOE started several initiatives. Among which were the investigations on status and activities of international cooperation of TVE higher institutions, developing strategies and policies for implementing the concept of international academic cooperation, organizing an advisory committee to provide consultations, assigning a working group as the taskforce to promote the activities, and setting up a website for providing information and exchanging media and experiences. Some action plans were also being taken, such as the workshops on international affairs for training the staffs of TVE institutions, providing financial supports for international cooperative projects, and sponsoring international conferences on TVE, etc.

The most recent action plans are to organize an international conference, which is entitled as “The 2002 International Conference on Technological and Vocational Education Amongst the Southeastern Asian Countries”, and will be commenced on May 27; and a regional TVE consortium will be initiated after the conference. These two action plans have been listed in the highest order of DTVE’s 2002 work plans, and will arouse attentions and involvements of TVE higher institutions to work out more international activities.

Education for Internationalization

As the needs of the multi-national inter-dependency have well been aware of, international cooperation on TVE has also been an issue of economic activities. Nowadays, many Taiwanese companies invest in the Southeastern Asian (SEA) region, take advantages of the favor-treated taxation status and the abundant human resources. However, they also face the shortages of the well-trained skillful labors and staffs of management level. For solving this problem, the factories have to rely on the experienced workers or foremen from Taiwan at the first phase of overseas investments. By doing so, the production cost and overhead for management are not really saved. Therefore, for long-term operation, they have to offer their own training programs to the local employees. Or, some companies select the local employees and send them back to Taiwan for training. Both ways could reduce in parts the personnel costs.

Recently, the Association of Taiwanese Overseas Companies has approached DTVE, and urges DTVE to set up an incentive policy as to encourage exports of professional high schools and junior colleges to the area where Taiwanese companies invest. DTVE has assigned the working group to study the feasibility, and a delegation will tour and survey some SEA countries on this mission.

In addition to exporting the experiences of TVE and professional training programs, the course packages of TVE higher institutions are also forced to update with curricula best for cultivating technicians or technologists competent for international job markets. Included in these curricula are the enriched foreign language programs imposed on students to compulsorily acquire foreign languages. English is especially emphasized, though recently Thai and Malay languages are introduced into the language courses.

Some TVE universities and colleges work with foreign universities on the twining (or joint) degree programs. Students enrolled in the home institutions are eligible to spend one or two years in the foreign host universities under some terms and conditions. Students who complete both the requirements set by home and host institutions will be conferred two diplomas, each one bears the name of either home or host institution. This twining degree program is attractive and welcomed, and has been regarded as one of the most efficient way of education for internationalization. Most of the foreign host institutions involved are in the European countries, which is also part of the reasons why in the recent years the number of Taiwanese students in Europe is increasing, while is decreasing in the United States of America and Canada.

Short-term study tour is also taken as a way of internationalization, and is even more popular than the twining degree program. Study tours are normally conducted during the summer break, which enables students to go overseas without interfering their normal semester studies. Scholarship is an award and given to those selected students of excellence for taking parts in the short-term study tour as a partial financial support to their international traveling and expenses. This scholarship program is also used as an attraction for student recruitment. NPUST is the first TVE institution to adopt this strategy, and followed by more and more institutions in the past three years. Up to this point, NPUST has sent four batches of students to its foreign sister universities, such as Washington State University in USA, University of New England in Australia, and Kasetsart University in Thailand. Students were deeply impressed by the host universities, and widely opened their visions of internationalization after they joined the programs.

DTVE's Policies and Incentives

DTVE started from about four years ago (1998) enforcing some policies and incentives for promoting the concept of "international cooperation", based on the recommendations of the report submitted by the working group (NPUST) and a study group consisting of the directors in charges of international affairs of 12 TVE higher institutions. Among these suggestions, an advisory committee consisted of 15 governmental high ranking officers, university presidents and professors, is functionally engaged in planning international cooperative projects, and serves as an advisory committee to DTVE concerning the international affairs and activities. A working group of taskforce, currently led by the NPUST president, has also been appointed to work closely with the advisory committee, and assigned to execute the policies set by MOE and DTVE. An internet website for providing immediate information, educational laws and regulations, and answers to the frequently asked questions on international exchanges and collaborations has anchored at the homepage of DTVE as <http://www.moe.gov.tw>. This website provides information in both Chinese and English versions of easy accesses and conveniences for local and foreign surfers. Most of the TVE higher institutions have already been hyper-linked to their servers, and providing all the messages of international exchange activities.

To encourage internationalization in the TVE higher institutions, DTVE subsidizes financial supports to the international cooperative projects proposed by the interested higher institutions upon applications and on review basis. Once meeting the criteria of approval, DTVE funding may be used to partially cover the expenditures incurred from teaching and research exchanges and cooperation programs for students and faculty members with foreign educational partners. Priorities and standards were set especially for those projects of mutually and equally beneficial to each other, and establishing the formal linkages by signing MOU of academic cooperation. Other policies, such as organizing university coalitions based on similar specialties and interests, or same districts for international cooperation affairs, or net-working to cooperate with foreign institutions, had also been designed and enforced. And the most recent suggestion set by the advisory committee is to include the internationalization as one of subjects of annual assessment to the TVE higher institutions. Each institution has to show its programs and activities of international cooperation. The assessment results are used as references for the next year when applying financial aids for international cooperation projects. This policy has attracted many attentions and is evidenced by the dramatically increasing number of project application, and is further shown in the next section.

In addition to DTVE, other agencies are also suggested for funding to support international cooperative projects. Representatives of these agencies are invited as the member of the advisory committee, which include the Bureau of International Cultural and Educational Relations, the Department of Higher Education, both of MOE; the Council of Agriculture (COA), mostly for international cooperative projects on agriculture; the National Science Council, especially for bilateral collaborations with other countries; and the International Cooperation and Development Fund (ICDF), a foundation providing international aids for improving finances and technical infrastructures to those countries in needs. Each agency, though different in their missions and objectives, regularly provides funding and calls for co-workers from higher institutions

Some Statistics

Investigations conducted by the NPUST working group on the international exchange and cooperation programs of the TVE higher institutions during the periods of 1996~1998, and 1999~2001 are shown in Tables 1 and 2. Table 1 shows the data before DTVE policies, and Table 2 shows the annual statistics after the policies were enforced. Comparisons between these two periods show the international activities steadily increase year by year, and reach to the summit in 2001. These data are also reflected in the number of projects applied for financial aids from DTVE, as shown in Table 3. Table 3 also provides information such as the number of projects applied, approved, and the total amounts subsidized. From this statistics, not only the number of applications and approvals are significantly increased, but also the money subsidized to those projects increases drastically from 7 million NTD in 2000 to 45 million NTD in 2002. This data shows that the strategies have already been focused on the subject of internationalization, and the policies are set accordingly to facilitate and implement international cooperation with foreign institutions. Other investigations shown in Table 4 based on the areas and number of allied universities found that the areas chosen for international cooperation were mostly in America (including North, Central and South parts), the most popular area, where traditionally is regarded as the first choice area for international cooperation, especially the countries like the United States of America and Canada. Australia has gradually been an important country for international cooperation in the past few years, mostly thanks to the first and second "Australia-Taiwan Bilateral Conference on TVE" held in 1996 and 1998, and Director Mr. Robert Noakes of Education Section, the Australian Commerce and Industry Office in Taipei, for his continuous efforts and supports. And this "Australia-Taiwan Conference on Higher Education" will definitely generate many more channels and opportunities for bilateral cooperation in the nearest future, and will also benefit the TVE higher institutions in Taiwan.

Regional Cooperation in Southeastern Asia

DTVE accepted the suggestion of the advisory committee to reinforce regional cooperation with the Southeastern Asian countries about two years ago. The reasons behind this suggestion were that many overseas Chinese and Taiwanese immigrants in this area share the same language, cultures and even social values; an increasing number of Taiwanese businessmen invest in this area and need many TVE trained and skilled workers; the advantages of the geographical location which at best only takes four hours to reach from Taiwan; and the last, Taiwan has accumulated experiences in TVE not only in the higher education level but also in professional high schools. And the exports of these experiences may be used as one of the ways to enhance regional cooperation.

DTVE this year has decided to allocate major parts of its annual budget in supporting with the first priority consideration to those projects proposed to cooperate with the institutions in SEA area. According to the statistics by the working group, totally 45 million NTD will be used to support 58 projects working on SEA area. Statistical analyses on the districts of the applied projects for international cooperation are listed in Table 5, which shows that 77 out of 114 projects applied for financial supports are in SEA region.

In addition to the individual project proposed by each TVE higher institution, DTVE also initiated a proposal to call for an international conference. This conference is entitled as "The 2002 International Conference on Technological and Vocational Education Amongst the Southeastern Asian Countries", and will be held in the period of May 26 till June 1. Invited speakers from foreign countries will present their TVE systems and exchange experiences among the audience. Potential cooperative projects will also be discussed during the conference. Organization of a "TVE Consortium Amongst the Southeastern Asian Countries" will be discussed and co-initiated by the representatives from each participating country, which is taken as the ultimate goal for this international conference. DTVE will financially support the foundation of the consortium, and hopes that this consortium will serve as an effective organization for regional cooperation on TVE, and closely works with the SEA countries on improving and upgrading the TVE systems. An organizing committee consisting of governmental officers and representatives of the local TVE higher institutions has been set up. NPUST is assigned to execute all the decisions and policies as suggested by the committee.

Case Reports of NPUST

NPUST takes international cooperation as the most effective ways to promote itself in the international stage. In the past decade, academic activities of international cooperation have been strongly supported and encouraged, and involved by the faculty members and students. That's why it was appointed four years ago by MOE as the working group for promoting the DTVE's supreme policy of internationalization. NPUST has also been recommended by MOE as a model for international cooperation based on some important and meaningful achievements it worked with both foreign and local universities, governmental and non-governmental agencies. Two cases are addressed here to show how internationalization benefits NPUST and how NPUST does it vice versa.

The Environmental Center of Livestock Waste Management (ECLWM) for the Asia Pacific area was founded in 1996 with the sponsorships and involvements from many different organizations. It was co-initiated by the US-Asian Environmental Partnership (USAEP) of USAID and NPUST for "Clean Revolution". Five US universities, which are Purdue University, North Carolina State University, Oregon State University, Iowa State University, and Illinois Institute of Technology, provide with professors in this field on technology development and transfer. The American Equipment Manufacturers' Association provides free equipment to be installed in the center. In addition, COA, EPA, and MOE of Taiwan, and USDA also support this center with funds and the related necessities, and help the center operations. NPUST as the host of the center, provides land, housing, equipment along with several academic staffs for running this center. Relying on the excellent and state-of-art facilities and software established in ECLWM, this center has trained many technicians for livestock waste management from local and the SEA countries. This center serves as a typical case to exemplify that international cooperation can be beneficial to each other among the participating groups or organizations.

NPUST started another case of international program in its Graduate Institute of Tropical Agriculture (ITA) in 1997. This graduate institute recruits students not only from local, but also from foreign countries. It has also become the first graduate institute in Taiwan to offer all the courses instructions in English. Students from countries of diplomatic relationship are entitled to the full scholarship for master or doctoral programs, which includes a round trip flight ticket, monthly stipend, tuition waivers and free dormitory. International Cooperation and Development Fund (ICDF) annually supports this program for 12 foreign students. NPUST is also providing scholarship to 8 foreign students from those countries friendly to Taiwan, which is almost the same except the round trip flight ticket is not included. Up to now, this institute has already received students from Senegal, Gambia, Swaziland, Solomon Island, El Salvador, Costa Rica, Honduras, Macedonia, Russia, Vietnam, Thailand, Amman, etc. This institute also provides training programs to recharge those Taiwanese experts of the Technical Missions posted overseas. With

the most leading-edge technologies and knowledge they learn from ITA, they return to assist improving agricultural technologies of the countries they post. ITA provides another type of internationalization where the university works closely with a non-governmental foundation and many overseas technical missions to help improving agricultural technologies in many developing countries.

Conclusions

The rapid advent of communication and transportation technologies has brought the whole world more closer than ever before. More and more bilateral and multi-national cooperation projects on economics, education, and cultural exchanges, etc. are initiated between or among countries. The great success in Taiwan economic development has long been a highlighted topics in the international arena. This success has also been reasoned and attributed to its successful TVE system for cultivating sufficient amounts of skilled and knowledgeable technicians and technologists for many industrial sectors. This can serve as a very great example to other countries in economic development by the successful TVE system. As the 144th member of WTO, Taiwan has set forth its steps toward the global community, and is more than willing to share the unique experiences of its economic miracle to those countries in needs. Therefore, as an obligation to feed back to the global community, DTVE's policies and decrees for internationalization will prove to be substantially beneficial to the TVE higher institutions and those foreign counterparts.

References

1. ICDF, (1999) Pingtung MSc Program: Reflecting on lessons learned. International Cooperation and Development, ICDF, Taipei, Taiwan, June 1999.
2. Guu, Y. K. and Liu, S. D., (2000) International Collaborations of Higher Educational Institutions in Taiwan. The Bangkok International Conference on Graduate Education Towards the Year 2010, Kasetsart University, Bangkok, Thailand, January 20-21, 2000.
3. Liu, S. D. and Guu, Y. K., (2000) International Collaborations as a Way to Establish Educational Partnerships. The 1st International Conference of Partnership in Education Between Technological Schools and Non-Institutional Training Organizations, National Yunlin University of Science and Technology, Yunlin, Taiwan, May, 2001.
4. Liu, S. D., (1996) Current Status and Future Perspectives of Academic Cooperation Between the Universities of Taiwan and Australia. The 1st Taiwan-Australia Bilateral Conference on Vocational Educations and Trainings. The Hilton on the Park Hotel, Melbourne, Australia. May 27-29, 1996.
5. Chen, D. H., (2002) Promoting the Concepts of International Cooperation for TVE Higher Institutions and Implementing the Projects. The 2002 Workshop on International Cooperation for TVE Higher Institutions. NPUST, Pingtung, February 20, 2002 (in Chinese)

Table 1 Statistics of Activities of International Cooperation During the Period of 1996~1998

Exchanges and Cooperation	No. of Activities
1. Exchange visits by university presidents	132
2. Faculty and staff exchanges	125
3. Exchanges of course materials	54
4. Exchanges of printed materials and journals	43
5. Short term exchanges of teaching and research	30
6. Student exchanges	23
7. Long term exchanges of teaching and research	9
8. Cooperative research projects	7
9. Others (co-host of conferences, distance education)	13
Total	436

Table 2 Statistics of Activities of International Cooperation during the period of 1999~2001

Exchanges and Cooperation	No. of Activities			
	Year	1999	2000	2001
1. Faculties outwards for teaching		10	21	42
2. Faculties incoming for teaching		10	23	43
3. Faculties outwards for research		14	31	51
4. Faculties incoming for research		5	11	23
5. Hosts of international conferences		28	46	67
6. Faculties outwards for conferences		245	268	220
7. Faculties outwards for cultural exchanges		93	166	219
8. Students outwards for taking courses		15	35	29
9. Students outwards for short term studies		197	283	275
10. Students outwards for conferences		18	15	27
11. Students outwards for cultural exchanges		66	102	205
12. Other academic activities		205	317	444
Total number of activities		906	1,318	1,645

Table 3 Statistics of Projects Applied and Approved, and Financial Aids Given During the Years of 2000~2002

Year	No. of Institutions Applied	No. of Projects Applied	No. of Projects Approved	Amounts of Funds Given to Approved Projects (Millions)
2000	26	38	16	700
2001	31	54	22	900
2002	55	114	58	4,500
Total	112	206	96	6,100

Table 4 Statistical Analyses of Numbers of Sister Universities in Different Areas During the Period of 1996~1998

Districts	America	Europe	Australia	Asia	Africa	Total
No. of Activities	75	20	23	42	1	161
Percentages	47%	12%	14%	26%	<1%	100%

Table 5 Statistical Analyses on Districts of the 2002 Projects

Districts	SEA Countries	Other Countries	Total
No. of Projects Applied	77	37	114
Percentage (%)	67.75	32.45	100

THE LEGISLATIVE FRAMEWORK FOR ADMINISTRATION AND GOVERNANCE IN AUSTRALIAN UNIVERSITIES

Robert H T Smith

Deputy Chancellor, Southern Cross University

Professor Smith's undergraduate and graduate degrees are in geography (BA, UNE, 1957; MA, Northwestern, 1958; PhD, Australian National University, 1962). From 1961 to 1979 he was a faculty member in a number of universities in Australia, Canada and the USA and served as department chair/head at Monash, Queen's in Kingston (Ontario) and UBC. He was a Guggenheim Fellow in Nigeria in 1964-65 while on the faculty of the University of Wisconsin-Madison, and has held two Fulbright travel grants. In 1979, he was a Senior Killam designate at UBC. During his appointments in Australia from 1986 to 1993, he served on a number of national and international bodies (Vice-President and President of the Australian Vice-Chancellors' Committee; Vice-President and President of the Australian Higher Education Industrial Association; and Council Member of the Association of Commonwealth Universities). Professor Smith's Washington-based AEO appointment concluded at the end of June 1997 when returned to Australia.

ABSTRACT

The term 'University' is protected in all Australian jurisdictions. All universities, state-supported and private, are required to operate under an enabling Act of the relevant Commonwealth, state or territory government. Under the Australian Constitution, education is the responsibility of the states and territories rather than the Commonwealth (the two exceptions being the Australian National University in Canberra and the Australian Maritime College in Launceston, Tasmania). Two Commonwealth Government Acts are especially important for Australian universities: the Higher Education Funding Act (HEFA), and the Educational Services for Overseas Students Act (ESOS).

ANALYSIS OF UNIVERSITY ACTS

The University Acts of Australian universities have some or all of the following characteristics:

Establish the University

Define the functions and powers of the university

Establish the governing body [GB] (council, senate, board of trustees)

Define the function and powers of the GB

Provide for the composition of the GB

Define the role of the GB

Define the officers of the GB, including the Chancellor (who Chairs the GB) and the Vice-Chancellor (who is the University's Chief Executive Officer)

Define the committees of the GB

Define bodies connected with the University

Provide for the establishment of By-laws [Statutes], Rules, Policies, and Guidelines

ISSUES OF GOVERNANCE AND ADMINISTRATION

The size and composition of GB's

The distinction between 'policy' and 'management'

The role and performance of GB's collectively and the role of individual members

The role of the GB in academic decision-making

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月8日（星期一）

專題討論

行政與管理之法規架構

演講者

南十字星大學董事會副主席

ROBERT SMITH 教授

謝謝你，黃教授。其實我已經退休，只是位榮譽退休教授，不再是執教鞭的教授了，我也不確定自己是不是真的曾擔任過教授，這些日子來我總稱自己是個老地理學者，上了年紀的校長。雖然我擔任過這些職位，但是早就退休了。說實在話，我真的是跟不上時代了，可是我對大學管理一直深感興趣，所以才能繼續在新南威爾斯州北部的南十字星大學負責行政管理工作。因此，今天能有機會向大家談論澳洲大學的管理，我倍感榮幸。

老實說，在準備此次演講時，我一直在考慮如何利用大學法資料，完成一篇短短二十分鐘的演說。至少在澳洲，大學法規不怎麼有趣，你不會在睡前看完後放在枕頭下或床鋪邊。如果大白天一起床就讀這些法規，我保證你一定很快又會睡著。不過，我試著針對澳洲大學法規，整理出一些管理特色。黃教授，我在管理上的評論可能會多過於行政方面，所以若有何不足之處，我們也許可以在討論時間提出來研究。

我今天演講的大綱會著眼在立法背景、權力授予法特色和管理行政方面。首先由背景開始，也就是三個主題中的第一個。我想早上 Shergold 博士也談到，在澳洲，「大學」一詞受到澳洲所有司法權保護，受到公司法規和商務名稱法規保護。因此，任何稱為大學的機構皆必須通過立法認可，經過適當的議院決議後才能正式成立。所以「大學」的成立在澳洲需要有相當的條件才行。我相信大部份的人都知道，在美國「某些」司法權裡，只有少部份而並非所有機構皆需要經過相同的限制才可成立。

第二，在澳洲的權力授予法方面，聯邦、州或當地政府都扮演著重要角色。此點是第一點的延伸，但是我們必須瞭解大學管理法通常由州或當地制定，例如北領地和澳洲首都行政區，而澳洲國立大學必須通過澳洲聯邦議會許可，才得以成立。

第三，根據澳洲憲法，教育是州或領地政府的責任，而非聯邦議會的職責。聯邦的責任是提供高等教育補助金，但得先與各州協議，根據憲法特定條款，再將資金直接由聯邦財政部撥給大學。我認為應有條款明定補助金須由州政府國庫支付，但是法律卻明定補助金須由聯邦直接撥給州政府，此為澳洲法律的一項特色。

第四條背景：在澳洲至少有四項系列聯邦法規相當重要。除了支配州政府的權力授予法之外，至少還有四項系列聯邦法規。第一為「高等教育撥款法案」，或簡稱為 HEFA 法案。根據此法案，資金由聯邦政府撥給大學，所有的重要文件呈交和學校機構計劃表都必須以 HEFA 法案為依規。澳洲只有二間私立大學，若

您的學校為私立大學或您想在澳洲成立私大學，目前資料上有些學校表示有興趣，在會議或其他座談會討論的重點應該為：「我們如何使自己納入 HEFA 法案？」。

第二項重要的系列法規為「海外學生教育服務法案」(the Education Services For Overseas Students Act)，或簡稱 ESOS 法案，目的在於保障海外學生到澳洲後能學有所值。此外，「移民法」也提供大學招募學生到澳洲就讀的方法。第四項重要系列法規就是之前會議中所提過的「澳洲研究委員會法案」。此法案使澳洲研究協會成立為一個獨立的機構。我應該再加入第五項系列法案，就是「國家衛生與醫學研究委員會法案」，但是我想大家大概也都聽過了。

關於最後一條背景，我會將這個主題以年代來敘述。我只想說，所有三十九間大學中，我也看過書上的摘要提及有四十間大學，我必須問一下寫摘要的作者，看看是我算錯，還是她對，不過我想是三十九間大學。澳洲有四間大學於十九世紀成立，雪梨大學在 1850 年成立，墨爾本大學在 1853 年成立，阿得雷德大學於 1874 年成立，塔斯曼尼亞大學於 1890 年成立。從那時到 1960 年，澳洲又成立了四間大學。除了 Deryck Schreuder 教授曾提到的昆士蘭大學，西澳大學，還有另外兩間，一是在 1946 年通過聯邦國會法案而成立的澳洲國家大學，與 1954 年成立的新英格蘭大學。其實在第二次世界大戰前，新英格蘭大學原本只是雪梨大學的一間學院。

現在我們提到了八間大學。從 1960 到 1986 年，又相繼成立了十一間大學，現在一共提到十九間大學了。也許大家曾讀過有關澳洲大學的體系，聽過“pre-87 19”(1987 年前成立 19 間大學)。或許現在已經很少提及，但是在八零年代晚期的重整期間，卻是重要根據。從 1987 年至今，又多成立了十八間大學，其中大部分是於 1988 年發佈「白皮書」之後的重整時期所建立。因此，若查一下澳洲大學法，大家也許會感到驚訝，因為我們居然能在近代這麼短的時間內，成立這麼多的大學—三十九間中就有十八間在此時期成立。

我希望大家能注意到一點，許多於 1987 年後建立的大學，其實是早期成立的機構的分部，都是很早成立的機構。以巴拉雷特大學(the University of Ballarat) 為例，此大學的前身為巴拉雷特高級教育學院 (the Ballarat College of Advanced Education)，因 1994 年建立第一項法案而升為大學。在 1998 年，巴拉雷特大學修改了原來的法案：刪除須由墨爾本大學監管的規定，並反映出維多利亞州的重整情況。在重整作業之下，原本屬於職業教育部的巴拉雷特礦冶學校(Ballarat School of Mines)，納為巴拉雷特大學的一部分，巴拉雷特礦冶學校則早在 1870 年就已經成立。

根據 Deryck Schreuder 教授對於文化的評論來看，澳洲有些機構的文化算是多重文化，因為在這些機構相同的號召之下，澳洲成立許多學校及機構，但各自有各自的歷史。當大家將注意力由這些歷史轉到行政和管理，就會發現情況更複雜。

背景的部分就講到這裡，現在我要談談澳洲大學權力授予法的特色。在進入這個主題之前，我必須先提一件事。當我提及這三十九間大學，說明澳洲在十九世紀是如何將僅四間大學，增加到目前的三十九間時，我發現了三件特例：位於昆士蘭州東南方黃金海岸的私立邦德大學，在通過昆士蘭州議會法案而成立的同時，也組成了邦德大學有限公司，屬公司法規管理；第二件，澳洲天主教大學為一間公司，依維多利亞州公司法管理，在澳洲新南威爾斯州、昆士蘭州、首都行政特區和維多利亞州營運；第三件，在西澳州費里曼圖的聖母瑪莉亞大學，遵照西澳州的議會法規經營，由董事會和理事會所擁有、管理和經營。

這三件例子，不論是邦德大學，澳洲天主教大學和聖母瑪莉亞大學，都算是特例。若你們查看其他三十六間大學，問：「誰擁有這些大學？」這些大學都受當地政治司法權管轄。

要了解權力授予法的特色，得先了解：「大學法是做什麼的？」首先，這些法案讓大學合法成立。法案內容是說，大學成立為長期經營的合法實體，經過正式批准，屬於法人團體。某些法案表示大學擁有「自然人」的特色。這句法律用詞真是太棒了，不過別問我什麼意思，只有律師才能解釋清楚。這代表了大學可以提出訴訟，也有可能成為被告。總而言之，大學通過了這些法案才能成為合法實體。

有些大學法在人們不遺餘力之下，才制定出成果。墨爾本大學採用了約 250 個字，甚至使用一些我之前未曾見過的字，例如世襲財產，一句古式的法律說詞，不過澳洲許多近代大學使用的詞句則較直接。例如昆士蘭州南方的陽光海岸大學的法案中，含括了此句：「大學為法人團體，經過合法批准，得以公司名提出訴訟，或受到控訴」，就是這樣。

因此，法案使大學得以成立，而法案同樣也為大學的功能與能力下定義。讓我以雪梨大學為例。雪梨大學是澳洲歷史最悠久的大學，同時此大學的法案也是首先取得認可。法案內容為：「大學功能為提供符合大學標準的教育及研究機構；第二，要提昇、增進以及傳授知識和研究；第三，保證能發展，提供文化、專業、技術和職業技能，為社會服務；第四，授予學士、碩士和博士學位，授予文憑和其他證書。」之後還有一條條款說明大學其他的功能：「由本法案或其他

法案授與或執行。」

「功能」在法規中的定義大概是澳洲大學的權力授予法中最重要的一項法條，我認為鮮少有人會去注意「功能」在大學法上的定義。我猜想大部分校長人，包括我自己之前擔任校長的時候也一樣，還有校內外活躍的政客們，很少人會去閱讀法案組成資料和其他相關資料。

為了此次演講，我很仔細地查看過這些功能，這也是我演說內容一直在強調功能的原因，我仔細選了位於新南威爾斯州的十間大學做為參考。在另外一場演講中，我看到參考資料上說其實新南威爾斯州有十一間大學，第十一間是澳洲天主教大學，其總部在雪梨，不過那所大學所採用的法案是維多利亞州的公司法，因此我在此向澳洲天主教大學致歉，因為今天我不會提到該校。

我之前必須縮短一些有關大學功能的細目。我待會兒會先做一些評論，再告訴你們這些細目。簡要說明，我將教育和研究機構視為一般功能。以雪梨大學、新英格蘭大學、雪梨科技大學、馬奎里大學和紐卡素大學為例。我沒有時間談論全部，不過我之前是先說明前五間大學，再談後五間大學，我今天一樣不會談論所有的細節。UNSW 代表臥龍崗大學(the University of Wollongong)，CSU 是查爾斯德大學(Charles Sturt)，UWS 為西雪梨大學(University of Western Sydney)，SCU 是南十字星大學。在此我就只提一些關於功能的細目。

在同一管轄區域的十所大學中，就各擁有二十六項不同的功能。在二十六項功能當中，有六項功能為一般定義。例如，我剛才提及的雪梨大學，其功能為「符合大學標準之教育與研究機構」，並「提升傳授知識及研究」。我不再談其餘五項功能定義。還有十二項功能為規範「大學必須以校地所在區的需求為優先」。例如，臥龍崗大學就有規定：「符合大學標準之教育機構必須以 Illawarra 區的需求為優先。」Illawarra 位於雪梨南方，臥龍崗市附近的區域。我還可以再舉出更多類似的例子。

另十所大學皆以特殊學生團體為主，定義其功能。雪梨科技大學就必須依據法令規定，為兼職學生及夜間部學生訂定特別規定。在此我不多討論夜間部學生的事情，因為許多法令都作了修改。有些大學則有為外校及遠距教學學生規定學習傳送模式。最後，也有些大學必須對於特定領域訂定相關規定。新南威爾斯大學就必須根據當地法令，開設「人道科學及醫學」一課。在此，我不再討論人道科學為何，而是何謂人道等相關知識。

我要重申以上評論是根據澳洲三十九間大學其中的十間大學整理而來，我

不願再多談細節的部分。然而，以上評論卻可反應出立法基礎的特殊性。上午 Deryck Schreuder 教授曾談到大學定義不同功能的重要性。澳洲各大學都認為自己才是主要研究大學，但事實上，回顧以上功能定義就不難發現到：大學立法基礎的特殊性仍有許多發展的空間。

接下來要談談法令相關事物。法令構成管理的主要部分，例如，法令裡通常會有一段聲明，宣告董事會、理事會、基金會、或西澳聖母大學的管理委員會，皆因法令因應而生。管理主要內容之功能定義皆有不同。例如新南威爾斯大學的管理法令均很相似：「本大學授權理事會或董事會有管理本校，享有管理及掌管校務的權利，以本校需求為優先做出決策，發揚學校宗旨，尋求學校利益。」

昆士蘭大學對董事會的相關規定如下：「理事會及董事會為本校之管理單位，擁有聘任大學職員、掌管本校事務及校產、及管理本校財務之權力。」維多利亞州墨爾本大學之管理規定如下：「本校管理單位有權聘任教職員工、並應全權管理監督本校校務及校產。」

我個人認為坎培拉大學的功能管理規定反而很模糊：「董事會可全權管理本校一切事務。」附帶一提，我認為若欲至坎培拉大學就任校長或校長一職，在簽定契約時，必須先看清楚誰有權力管理此校以及主要管理內容為何。

北領地大學的規定更模糊：「本校一切校務應由董事會全權處理。」。在南澳，1995 年 David Hoare 曾針對管理統治提出一份報告，此份報告即為 Deryck Schreuder 理論之參考。1996 年報告結束後，此三所大學的規定均已修改，而在每項規定裡都多了一項聲明：「董事會即為本校管理單位，主要職責為監督本校管理及發展狀況、許可重要計劃、落實主要政策、並監控審查本校運作狀況。」

在這裡我只是想點出澳洲管理單位的角色及職責之間的多樣化。澳洲大學管理單位最重要的權力為二：(一)聘任教職員工，及在必要時解聘主要職員；(二)代表權。管理規定內對代表權之解釋非常詳盡，因為口說無憑，所以必須要有周全的記錄管理規定的詳細內容以及管理單位的職責及職權何在。

主席，我知道我的時間快到了。接下來我將以圖表解釋，縮減演說時間，Schreuder 教授應該已經準備好要上台了。法令其中之一的功能為定義管理單位的組成及固定職務。等我做完解說，我的部份就可以結束。各位若有疑問可以在討論時間提出問題。

這份圖表是從坎培拉大學副校長 Meredith Edwards 教授的論文截取出來，

她幾年前寫這篇論文的主要目的為探討大學管理內容之特色。圖表上的數據大約與 Deryck Schreuder 教授演講時的圖表數據大致相同。請看圖表最後一欄，為 2000 年時的管理席位之平均值；依過去職位來看，董事會的平均值為 4，教職員工 3，一般員工 1，學生 2。有些規定要有一位研究部學生及一位大學部學生代表，如此組成大學管理的議會。

新南威爾斯州是全國唯一仍執意在董事會裡安插議會成員的州，維多利亞州及南澳早已不將議會成員納入管理單位的一部分，因為這只是浪費人力資源罷了，我已將我的觀點告知給管理單位所有行政者及同事。但是當我們籌碼用盡時，也只能讓議會成員訂定規定，因為他們手中總是握有王牌。Deryck Schreuder 教授認為畢業生與校友的代表性並不相同，做為一位前任校長的立場而言，也許這種想法是比較好。

許多大學會推舉兩位召集人，一為管理單位指派之管理行政者，平均值為 6。至於另一種方式為何我就不得得知了。但有趣的是，在圖表最後一欄中，由州議會、司法、部長、或者擁有此大學之政府等指派管理單位成員人數僅占少數，因此在澳洲，政府、特區、州、或聯邦並不會真的指派足夠的人員至管理單位，好讓他們在大學裡達到某種特定目的。若真有以上情況發生，則必定是巧合或者意外，決不會是透過深思熟慮才下的決定。

主席，請容我再針對提出法令之目的及其固定教職員提出評論。許多大學會界定固定教職員為何，所以讓我很快地解釋界定內容，然後就可以結束此次演說了。有些大學有所謂的「訪客」規定，以往是由州總督為「訪客」，並在特定法令下，擁有調解糾紛之權力及責任。「訪客」就像是地方法院一般，為大學調解永無止盡的行政管理訴訟及困境。

幸好現在此條規定已不包含在澳洲各大學規定之中。此規定是仿效英國，而事實上，澳洲有許多規定都是仿效英國而來，但並非全部規定都古板不堪——雖然大部分規定都很古板就是了。「訪客」現今只剩下形式上的禮節功能，正如 Deryck Schreuder 所說，董事會有董事會主席，澳洲大學的董事會主席有二項主要的職務：一為主持董事會運作，二為主持學校儀式。董事會主席有以學校之名授予學位之權力，並代表學校出席所有的儀式場合。不像加拿大及英國，這兩項功作分派給不同的人去做。

當然也有董事會副主席，我正巧就是副主席。這表示，若主席不在你就要代理他的位子，或在畢業典禮多的時段，你會有四個畢業典禮要參加，而且通常是在午餐後舉行。此外你還得對講者表達謝意，即表示你得注意其演講內容。剛

才我很注意聽一位同事的演說，可是老實說，Faith，我完全記不得妳講了什麼！

我們都知道，大學校長就如同執行長，同等於各大學中或其它系統單位的總裁。還有一位非常重要的人物：主任秘書。大學的主任秘書或註冊主任就如同高層公關，不只是登記以及準備會議記錄等其他事情。主任秘書扮演極重要的角色，因為主任秘書是大學的雇員，但就某種角度來說，他（她）受學校僱用，必須聽命於校長，同時也得對董事會負責。所以一般大學的主任秘書，如同高層公關，其工作範圍都不太討喜。

主席，我也許已經多談論了一些事，但我想就到此結束，或許其他可以在討論時間中再提出來研究。很抱歉我耽誤了時間，謝謝。

HIGHER EDUCATION IN TAIWAN: TRANSFORMATION AND REFORM

Pi-twan Huang

Tainan National College of the Arts

ABSTRACT

In the more than half-century since the government of the Republic of China moved to Taiwan in 1949, the political and economic advances and reforms have earned the title of "Taiwan Miracle". Behind these giant steps forward, the greatest motivating force was doubtless that of education.

In 1949 there had only one university and three colleges with a total student population of about six thousand in Taiwan; by year 2002, these numbers have increased to 145 universities and colleges, with a student population of over one million. During this period, per capita income has also risen from US\$137 to US\$14,000. We can justifiably say that the social and economic development of Taiwan has progressed hand in hand with the development of Taiwan's higher education.

During this process of transformation, as Taiwan society is becoming increasingly heterogeneous, liberal, and democratic, colleges and universities are also striving to create their individual distinctiveness. This short paper will touch on some of the measures higher education in Taiwan has taken to achieve a more effective reform.

ISSUES IN QUALITY ASSURANCE IN UNIVERSITIES – AUSTRALIA

Professor Denise Bradley AO
Vice Chancellor and President
University of South Australia

Professor Bradley is a member of the Australian Vice-Chancellors' Committee, Australian Universities Quality Agency and Global University Alliance. She is a member of the Board of Directors of the Business/Higher Education Round Table and has been extensively involved in national educational policy groups.

ABSTRACT

Australian Qualifications Framework

Framework approved by Council of State and Commonwealth Education Ministers. National register of accredited providers and accreditation authorities. National framework of award descriptions. Covers higher education and vocational education and training,

Commonwealth Government

Provides bulk of funds for teaching Australian students. Universities report annually on performance outcomes, and on plans for teaching, research and quality improvement. Much of this information is published annually by the Government and is publicly available.

38 Public and 2 Private Universities

Self accrediting. Responsible for academic standards and quality.

Australian Universities Quality Agency

Independent body funded by Commonwealth and State governments. Board has government, university and community representatives (established 2001)

State/Territory Governments.

Legislation establishes universities in the jurisdiction. Universities report to State Parliaments annually and are audited by Auditor General in that jurisdiction. *National Protocols for Higher Education Approval Processes* standardises roles in relation to higher education courses offered outside universities.

2 Influences on Management of Quality in Higher Education

- 'Massification' of higher education.
- Recognition by government of the role of universities in economic development.
- Growth of education as an export 'industry' in Australia.

3. Issues for Australian Universities in Managing Quality

- Role of the university now under more scrutiny publicly and with less public agreement about what the role is.
- Balance between the public good responsibilities and market orientation of universities.
- Decline in funds per student place.
- Dealing with new modes of delivery – on-line, transnational, articulated provision.
- How many masters do we serve?
- Costs of a quality system
- Tensions between traditional collegiate models of quality management and models introduced from industry



**TRANSCRIPT
OF PROCEEDINGS**

SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

KEYNOTE ADDRESS:

ISSUES IN QUALITY ASSURANCE IN UNIVERSITIES

SPEAKER:

PROF DENISE BRADLEY, AO

VICE-CHANCELLOR AND PRESIDENT

UNIVERSITY OF SOUTH AUSTRALIA

PROF BRADLEY: I am going to do three things today. I'm going to describe fairly briefly the quality assurance framework for universities in Australia - briefly and fairly globally; I'm going to talk very briefly about what I see as the three major influences on concerns about quality assurance in Australian universities; and then I'm going to spend most of my time talking about what I see as some of the issues in quality assurance. The paper I'm giving, in greater detail, will be available in a printed version at the end, and I'm largely following the outline that is in fact in the conference papers.

First of all, let's be clear what we're talking about in Australia. We are talking about 36 public and two private universities. We are not talking about technical colleges or what we call vocational education and training. I'm talking only about universities, and the universities are self-accrediting, autonomous institutions, whether they're public or private; they're responsible for their own academic standards and quality; and the title "university" is protected by law.

So universities sit at the centre. Around this are a number of frameworks. One is a thing called the Australian Qualifications Framework. It covers both higher education and vocational education and training and it's approved by a council of state and Commonwealth education ministers. It comprises broadly two things.

- (1) A national register of accredited providers of higher education, so universities are on that register, and of accreditation authorities.

There are some higher education courses which are offered outside universities but their providers need to be accredited providers. The number of such courses is increasing in Australia.

- (2) A national framework of award descriptions, a definition of what is an undergraduate degree, a postgraduate coursework degree, a diploma, so there's a national agreement about what those awards mean.

The Commonwealth government is part of the quality assurance framework, and I note that the Commonwealth is actually taking a transcript of all of our speeches - not just our written words but our spoken ones. It provides the bulk of funds for teaching Australian students and for undertaking research.

Universities, as Dr Shergold said yesterday, report in considerable detail annually on student numbers, on student profiles, on staff numbers and on their performance outcomes across a diverse set of performance indicators laid down by the Commonwealth. Each university provides a plan for research, for its profile of teaching activities and for quality improvement, and by "profile of teaching activities" I mean the broad numbers it's going to have in fields of study and the levels at which it's going to offer undergraduate/postgraduate coursework or higher degree.

Much of this information is published annually by the government in a

document which is, in a sense, the Commonwealth minister's annual report and is publicly available on the Department of Education, Science and Training web site. There's an enormous amount of information held by the Commonwealth via each university.

But all the public universities are established by legislation in their own state or territory. So, though the Commonwealth government provides the funds, the state governments provide the legislative framework within the Australian federal system. Those of you who are presidents of universities can muse upon what that might mean. I will talk a little bit more about it later.

The state universities are required to report annually to their state and territory parliaments in reports that are laid on the table of parliament and are publicly available, and are also audited by state and territory auditors-general in that jurisdiction, and I shall talk a little bit more about that issue in a moment.

And, once again, there is a thing called the national protocols for higher education approval processes, which is agreements by states and territories with the Commonwealth which standardise what are the particular ways in which higher education courses offered outside universities are accredited and managed, and the numbers once again of such courses are increasing.

Most recently there has been the formation of the Australian Universities Quality Agency, which is an independent body funded by the Commonwealth and state governments. The board has government - that is, state and federal government - university and community representatives on it. It's established as a company. It was established formally last year and comprehensive audits of all Australian universities commenced in 2002. So that comprises, really, the framework in which we operate.

Now I want to just talk very briefly about what are, indeed, some of the influences that have led perhaps to this fairly formal framework, and I'm not going to spend much time on it because many people talked about the same influences yesterday. The first is the massification of higher education, the increase in Australia - in fact, in the last 10 years, close to doubling - of the number of students enrolled in higher education in this country and the move from an elite to a mass system, which has of course meant that higher education has become much more of a public issue, as I believe it has in your country too.

What has happened, too, is that throughout the world, I think, as the talk has begun about a knowledge society or an information economy, then the role of universities in economic development has become much clearer to government, and governments have then become much more interested in - I was about to say "interfering in their internal affairs" - in assuring that they're confident about what's happening within them.

The third, and perhaps in Australia relatively unique, influence has been the growth of education as an export industry. This industry this year, across all

sectors, makes higher education a bigger industry for export than wool and almost as large as wheat. It's over \$4 billion a year coming into Australia through the export of education, so of course both Commonwealth and state governments are extremely interested in the question about the standards of the universities and about the management of the universities, and that has probably been one of the strongest influences over the last 10 years on the growth of government concern about quality in Australian universities.

But I don't want to spend a lot of time on those issues because I think many of them were discussed yesterday. What I'd prefer to do is spend a little bit of time talking about what I think are some of the issues. I think it will be true to say at the present moment that there's been a very lively debate within universities and between universities and government about Australia's quality assurance framework, about what's an appropriate model for the management of quality in universities, and various things have been tried by governments over the last 10 years.

It's probably just in the last two years or so that some degree of agreement has been reached about the framework, and it was the case that the Australian Vice-Chancellors Committee cooperated in the establishment of the Australian Universities Quality Agency, and four members of Australia's universities are on the board of that agency. So, without necessarily it being the case that AVCC agrees with every thing that the agency does or agrees necessarily with every thing that governments do in terms of the management of quality, we have reached in 2002 in this country some broad agreements about the management of quality in Australia.

But there are still some issues. This is perhaps an idiosyncratic list of them, but these are some of the issues as I see them. The first is - and it's a very important issue - is I believe that there is no public agreement in this country about the role of the university.

People say that, in a mass system, they want to see universities with diverse missions, doing a diverse range of things. Everybody, probably, in this room attended a university under an elite system. When I went to university in Australia, 5 per cent of the population attended university. It's now the case that over 30 per cent of the age group are moving on to university. It's in fact probably greater than that at present. It inevitably means that universities are very different places in the beginning of the 21st century from the places that they were 30 or 40 years ago, but the idea that most people have in their head about universities is an idea of the past rather than an idea of the present, and that raises a large number of issues for deciding what is a good university.

Is a good university one that meets the need of a broad section of the population? I'll just raise one question. Are you a high-quality university if you only allow a few people into the university and fail a large percentage of the people who apply, or does that mean you're a bad teaching university? It sounds a simple question but it's an absolutely basic issue around what is the role of the university and how do we make bottom-line judgments about

quality. It is clearly an issue that the auditing process by the Australian Universities Quality Agency will be grappling with all the time, because it starts off with some understanding of what is the role of a particular university. We have said in Australia, by government policy, that we want universities that are very diverse. It appears to be very difficult to get that in operation because of public views about what is quality.

There is a huge issue in our country about the balance between the public good responsibilities of universities and their market orientation and, once again, this goes back to judgments about quality. It's a particularly critical issue in regional universities. It's an issue in most. I remember saying to my chancellor that, if he really wanted us to make a great deal of money, we could become the Undergraduate Business University of Asia and we could make a great deal of money out of that, but we wouldn't actually be a university. I can see some people from Taiwan knowing exactly what I mean by that.

But if you're going to be a comprehensive university, serving a particular region, then you need to offer a range of programs, and in many cases a considerable percentage of those programs, particularly under the current funding arrangements, are not viable and need in one way or another to be supported. So when you make a judgment about the university's performance against its mission, do you criticise it because it's not meeting the demand, and the demand in Australia still is for very large numbers of people wanting to do various kinds of business courses, and you say, "Well, it's not providing enough courses like that," or do you say it's doing a good job if it's not taking as many people in that area but providing a broad range of programs, some of which will need, within our current funding formulas, to be subsidised, have internal subsidies?

There are huge issues in Australia at the present moment around the teaching of the humanities, the performing arts and the visual arts, and some areas of science, which are expensive to teach and, if you were making a market decision, you very probably wouldn't teach them in some universities.

We are all facing this, despite - I shall say this again - despite the argument by the government that there has not been a decline in funds per student place. It doesn't feel like that in the institutions and it's certainly been the case in all universities in this country that the growth in numbers - and the growth has been very considerable - has not been matched by a growth in funding. I might also say that the growth in numbers and in demands for different kinds of services has not been matched by numbers. There is an expectation now by Australian students that they should be taught in small classes by full-time professors and supported by the most expensive array of information technology that you might ever imagine, and all of us are trying to grapple with doing both of these things within a declining budget. So how do you make a judgment about quality when the actual money available is declining?

There's a fundamental issue, which is not resolved, about making judgments about the quality of offerings within new modes of delivery: online,

transnational education, and articulated provision. Increasingly, we are, in this country, offering both to overseas students and to local students arrangements whereby they might do two years in one institution and then finish off with two years in our university. It is in fact quite difficult to make judgments of quality about these new modes of delivery.

There's much debate, for example, if I use online education as an example, about some judgments that you might make about what is good online provision. Some people think that good online provision is a model whereby you replicate the on-campus teaching model. You have streaming video, you take a video of the teacher teaching, you put that onto a video, you put some texts beside it and you just replicate the teaching environment. I happen to think that's extremely bad online provision. But there is a very major debate that's taking place in this country and internationally about what is quality online provision, what is quality provision when you're actually engaging in that provision with a partner, how do you make judgments about quality, and of course the critical issue is: what was your intention in the first place?

It is the case that the international debate about quality standards in online education, in distance education or in any of these modes of delivery is still a very real debate. There's not an agreement about what quality is, so it becomes rather difficult to make judgments about whether or not you are meeting standards that people don't agree about, and I've given a couple of references in the paper to a couple of articles which deal with some of those issues.

Now, this is a particular issue in Australia and, as you might see from the description that I gave of the framework, and Dr Shergold made some comment about this yesterday, the universities spend an extremely large amount of time reporting to a whole range of different agencies about their activities. I'll just use my university as an example. We find it quite difficult to identify sensible management information because we spend most of our time providing accountability information rather than developing management systems which would help us manage the institution better.

We are also seeing in this country the move of the state auditors-general into a new role, and I talk about this in the paper. The state auditors-general, until recently, engaged largely just in financial auditing. But these - I think they're probably my least favourite people in the world - these small and generally grey men with small, dull eyes have decided that they are moving towards effectiveness auditing, and we have found in my university this year that we've been attempting to explain to a not wildly intelligent accountant the university's teaching and learning strategy in order for him to make a judgment, as an auditor, about whether or not we are appropriately managing it. We find this a fairly strange experience to be in, but all the universities in Australia are finding that the state auditors-general have decided that universities are a very, very interesting field of endeavour for them, where they can learn a great deal about many things, and we are all now dealing with what they call not efficiency auditing but effectiveness auditing.

We find it fairly difficult. I mean, these are people who have worked all their lives in the Audit Office in the public service, who are now coming and asking questions about strategy to institutions who, in many cases, acquire more than half of their funds from sources other than public sources, so it is a very strange process that is under way. But at the present moment, as I described early on, the universities report to the Commonwealth, through the Auditor-General to the state government and to a range of other state and Commonwealth instrumentalities which I haven't mentioned, though I do mention them in the paper, and it consumes very large numbers of resources through the process.

It is unfortunate, then, for the Australian Universities Quality Agency that it sits down in the midst of a set of other requirements. There is a need, I think, in Australia to sort through who is receiving what information and do they really need it, though, having been in public policy now for a long time, I wouldn't hold my breath waiting for that to happen. I know Dr Shergold told us yesterday that the Commonwealth minister was intending to do something about the Commonwealth reporting requirements. My experience thus far has been that they just develop new ones.

There are the costs of a quality system, which is implicit in how many masters do we serve. The actual costs of maintaining a quality system are quite high in terms of management information and the various processes that you go through, so it's quite important to work out what is your system, what is critical to do and what you're going to put your resources into.

Finally, I think that there are some very major issues for universities about the tensions between the traditional collegiate models of quality management and models introduced from industry. In the early days of talking about quality in universities in Australia, many people felt that you could just bring in from industry the kinds of quality models that had been used there. I think there's generally an agreement now that that's ridiculous. At the same time, there are some industry models that are very, very useful. Many universities, for example, are moving towards ISO accreditation for some of their administrative processes, but it is really quite clear that those kinds of models are inappropriate for managing the quality of teaching, and we are all part of an international debate of attempting to work through how we can intelligently and sensitively make judgments about the quality of teaching in universities.



University of South Australia

**AUSTRALIAN TAIWAN CONFERENCE ON HIGHER EDUCATION
(QUALITY ASSURANCE AND THE PURSUIT OF EXCELLENCE)**

9th April 2002

KEYNOTE ADDRESS

**ISSUES IN QUALITY ASSURANCE IN UNIVERSITIES –
AUSTRALIA**

**Professor Denise Bradley AO
Vice Chancellor and President
University of South Australia**

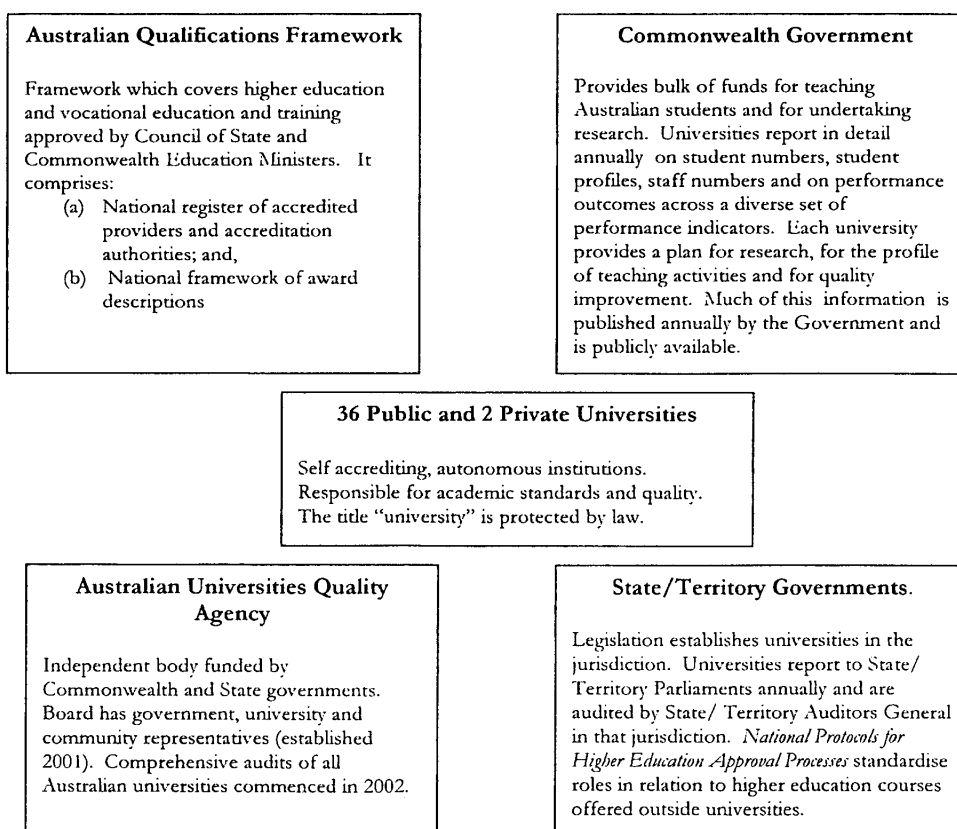
ISSUES IN QUALITY ASSURANCE IN UNIVERSITIES – AUSTRALIA

1. The National Framework

The National Quality Assurance framework for Australian Higher Education is one in which a number of agencies play a part. The use of the title ‘university’ is confined by law to those institutions which have the authority to accredit their academic programs, set their academic standards and maintain their quality assurance processes. However, the exercise of these rights is overseen by a relatively complex set of reporting and auditing requirements.

In order to understand these requirements some understanding of the relationship between State or Territory and Commonwealth governments is required. The thirty six public universities, other than those in Canberra, are established by legislation of parliaments in the state or territory which houses their main campus but receive funds to teach Australian students and to undertake research and scholarship not from the State or Territory government but from the Commonwealth government. These arrangements mean that the public universities have dual reporting obligations.

The diagram which follows outlines the roles of the major agencies responsible for assuring the quality of Australian universities.



2. Influences on Management of Quality in Higher Education

Everywhere in the world governments are moving or have moved to increase the numbers of people participating in higher education. As this has occurred there have been changes in the structure and management of universities. In this country, the size of universities has grown (initially through mergers), the number of universities has increased, the numbers of Australian students has almost doubled in ten years and universities are generally acknowledged to be less collegial and more managerial internally.

These changes have been driven by government recognition of the key role of universities in the development and maintenance of a knowledge society. The business of universities- teaching and research, provides the underpinning infrastructure for economic development. Thus governments everywhere have become very concerned about the costs, quality and outcomes of universities. However, another government policy objective has also had a substantial impact on the development of approaches to quality assurance in Australian universities.

The Australian government has been encouraging its universities to export education since the late 1980's. Since 1991, the universities have been subject to the requirements of legislation which establishes the basis on which programs can be offered to overseas students in Australia or in the home country. This legislation is designed to protect students from other countries who enrol in programs of study with Australian universities. In response to these policy directions, Australia's universities have been particularly successful in attracting overseas students to study in Australia and, more recently, in offering transnational programs delivered at a distance often through partnerships with organisations in other countries.

These three influences- massification, the economic importance (and costs) of higher education and the importance of education as an export 'industry' have led to a lengthy and spirited debate in Australia about the responsibility of governments for assuring the quality of higher education. Various proposals for dealing with what many have seen as the need for formal, transparent and credible systems of quality assurance have been proposed and in some cases trialled but have been resisted by the institutions which have argued against either their intrusiveness or their costs in contrast to their outcomes. Only in the last two years has there been greater consensus about an appropriate national framework and approach. The current arrangements as outlined in the earlier section have the support of both levels of government and of the university sector. Nevertheless there are still some major issues for universities as they seek to manage quality within the Australian system.

3. Issues for Australian Universities in Managing Quality

Universities and their outcomes are under much greater public scrutiny because so many more people are studying in them; they consume a significant amount of government revenue; and they are much more closely tied to the requirements of industry than they were in the past. While much that has changed has changed in response to public demands both for greater access by a broad cross section of the community and for closer links with industry in teaching and research there is still unease about the move away from an elite to a mass system of higher education.

The role of a university in an elite system is relatively well understood but as we have moved to a mass system people are less sure about how you judge the quality of graduates and the success of a university. Development of a system of national quality assurance runs up against questions about the mission of a university and how much diversity is acceptable. In this country we have said we want different kinds of universities with different missions and different outcomes. But does different really mean different or does it actually mean better and worse? Are some universities better than others? What do standards mean? Does it mean you have high standards if a large number of your students fail or does this mean your teaching is of a low standard? Questions such as these lie beneath the process of auditing Australia's universities and we know already that there is no consensus on the answers to questions such as these either within the university system or in public discourse.

Another issue of considerable concern for all of us working in our universities is how we address what has been seen in a democratic society like ours as the public good responsibilities of universities. Traditionally, our universities have been expected (and their founding legislation generally still requires them) to offer a broad range of programs that meet the needs of a particular region. However, some programs are more profitable than others and if we are responding to demand it is sensible for us to move out of areas of study with small enrolments or high costs. Throughout Australia the costs of teaching many areas in the humanities, the visual arts and music are generally high and it is financially sensible to rationalise or retreat from offering them. However, many people would argue that a university is more than a business, responding to cost and demand pressures. They would insist that in a democratic society a university must offer a balanced range of programs if it is to serve social needs. Once again, how does one judge the university's performance when undertaking an audit which must start with agreement about what the objectives of the institution are? More pointedly, how do universities meet the mission or legislative objectives of, for example, offering a comprehensive program in a region with a relatively small number of people seeking to enrol in some courses when the Commonwealth's current funding approach rewards large classes and low technology, low cost disciplines?

Australia's approaches to quality assurance- both of local programs and programs being taught here by institutions in other countries are challenged by new modes of delivery- online provision, transnational provision and programs which are

articulated, offered by two or more providers. Some very good work has been done by the OECD on assessing quality in transnational education and various organisations- government agencies and academic groups like distance educators are working to seek some consensus about quality and standards in online provision but I don't think it would be unreasonable to assert that the practice in both areas is moving in front of the consensus about adequate quality measures. Largely this is because a debate continues on whether these forms of education are designed to replicate the classroom situation or are unique forms of educational delivery where student satisfaction and educational outcomes must be assessed with reference to the intentions of those who have designed the educational experience. In fact, it is correct to say that there is no consensus on what constitutes best practice in these new modes of delivery. It is hardly surprising then that we lack consensus on how to judge their quality.

Perhaps the most immediate issue for Australian universities is the number of authorities to whom we relate and to whom we must provide data, reports and planning information. All state universities are audited annually by the State's Auditor General. These audits, which were once narrow financial audits, are moving further towards effectiveness auditing where the auditor examines and reports upon governance and management. At the same time we are required to present an annual report to our State Parliament. This covers not only financial information but also performance data. In some states the universities are required to report against particular performance measures which the State has identified as important.

The Commonwealth Minister requires very extensive reporting of information about student characteristics-gender, ethnic origin, socio economic status; the courses in which students are enrolled; staff characteristics, numbers and category of appointment; and proposals for the teaching profile over the next three years by level of offering and field of study. All this information is supplied in computer readable form in line with rigorous requirements laid down by the Commonwealth. This allows its officers to analyse the data and means that, effectively, the Commonwealth knows as much about our student body as we do. At the same time we provide annual plans for management of our research and research education, for support of students from Indigenous and disadvantaged backgrounds, for capital development and for management of quality. All this information is discussed at an annual meeting between representatives of the Commonwealth and the University. These plans require the analysis of performance data, some of which is routinely published. I will not detail other reporting requirements to State and Commonwealth departments in areas like Occupational Health and Safety and Equal Opportunity for Women.

The production of all these reports, plans and analyses consumes considerable resources within each institution and in many cases requires production of similar information in different formats. The requirements of the Australian Universities Quality Agency (AUQA) audit process, while not necessarily unreasonable in themselves, add to what is already a very significant burden of reporting by the universities to many agencies. The promise by the new Commonwealth Minister to

examine and, if possible, rationalise the reporting requirements is the only sign of hope that the various masters we serve might agree to a more rational approach. Finally, the quality agenda in Australia's universities has led to some very vigorous debates about what are appropriate models for the management of quality in university settings. While early debates focussed on whether the pressure for more systematic approaches to quality undermined collegial processes, more recently there has been greater acceptance of the need for transparent and public processes. There now seems to be agreement that models for quality management derived from industry are appropriately applied to some aspects of the university's operations, for example administrative functions like enrolment, project management or timetabling but are quite inappropriate for application in complex areas like teaching and learning. The very complexity of the teaching and learning process defeats the one-dimensional approaches common in industry. I won't labour this point but as we know a satisfied 'customer' (the student) could very well be someone who has been passed in a course which he or she should have failed.

Conclusion

The Quality Framework within which Australian universities operate is relatively complex. The new Quality Agency, AUQA, adds a further layer of complexity but there is an acceptance within our universities that it will provide an independent, public and transparent means of reporting on the quality of Australia's universities. However, existing problems like dual reporting and the costs of reporting have not been resolved.

References

1. Australia. Commonwealth Department of Education, Science and Training. (2001) *Higher education report for the 2002-2004 triennium*. (Pre print/draft release)
http://www.detya.gov.au/highered/he_report/2002_2004/html/1_3.htm
2. Hicks, M., Reid, I.C. and George, R. (1999) *Designing responsive online learning environments: approaches to supporting students*. Paper presented at Australian Association of Research in Education Conference, Melbourne, 29 November- 2 December.
3. Knight, J. & de Wit, H. (eds) (1999), *Quality and internationalisation in higher education*, Paris: OECD
4. Van Damme, Dirk (2001) *Higher education in the age of globalisation: the need for a new regulatory framework for recognition, quality assurance and accreditation*. Introductory paper for the UNESCO Expert Meeting Paris, 10-12 September.
5. Vidovich, Lesley(2001) "That chameleon 'Quality': the multiple and contradictory discourses of 'quality' policy in Australian higher education" in *Discourse: studies in the cultural politics of education*. Vol.22, No2.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月9日（星期二）

專題討論

大學品質保證的議題

演講者

南澳大學校長

DENISE BRADLEY 教授

今天我要講的有三部份。首先我想簡單客觀地描述澳洲大學品質保證的架構；然後我會簡短地提到影響大家對澳洲大學品質保證的關切之三個主要因素；最後我會用大部份的時間談論一些有關大學品質保證的議題。會後我有較詳細的書面講稿提供。我口頭報告的內容將依照我所寫的會議論文大綱。

首先，我想先說明今天我們所談的是澳洲的大學，而不包括技職專校或我們所謂的技職教育訓練機構。目前全澳共有 36 所公立大學，2 所私立大學。不論是公立或私立，這些大學都有自我審核授權機制及自治系統，對本身的學術標準及教學品質自我負責。在澳洲，「大學」這個名稱是受到法律保障的。

以大學為軸心，連帶有其他的架構，其中之一是「澳洲學歷資格政務會」(the Australian Qualifications Framework)，負責監管高等教育和技職教育訓練的學歷資格認定。該會是由各州教育廳及聯邦政府教育部所組成，掌管兩項業務：

(一) 全國性的高等教育機構名單登錄。因此，澳洲大學必須是通過該政務會審核通過且登記有案。

有些非大學機構也提供高等教育學(課)程，但這些學(課)程仍需經該會審核通過。非大學機構提供的高等教育學(課)程有持續增多的趨勢。

(二) 全國統一的學位授與機制，明確定義什麼是「大學學位」、「學士後文憑」、「文憑」，以便對學位或文憑的授與有全面統一性的標準認定。

聯邦政府也是品質保證架構的一環。(我知道聯邦政府不僅收錄這次會議所有書面報告，並將每位澳洲主講者的演講都全程錄音。)聯邦政府提供大量的經費作為大學教學及研究之用。

如同聯邦教育部 Shergold 次長昨天所說，大學每年都必須依照聯邦政府規定的指標認定，詳細規劃學生數目、學生資料、教職員數目和教學成果報告。每所大學均需提出一個包括學術研究、教學活動以及品質改進的計畫。所謂「教學活動」，泛指學士及學士後學(課)程的招生數目及課程內容。

政府每年都會公佈大部份的相關資料。這些資料都公開在聯邦政府部長的年度報告中以及聯邦教育部的網頁上。聯邦政府掌握了各大學的許多資料。

雖然聯邦政府提供經費，但是所有公立大學的成立是各州立法通過的。也就是說，澳洲的大學是在聯邦政府體系下，但是歸州政府法律所管。在座當過校長的同仁一定能體會到這種情況的箇中滋味。待會兒我將進一步說明。

澳洲的大學必須向所在的州政府及議會提交年度報告。這些報告是公開的，並且接受各州的監察。等一下我會進一步說明。

還有一種高等教育課程審核標準的「全國教育議定書」(national protocols)，主要負責非大學機構所提供的高等教育學(課)程之審查及評估。這些非大學機構所提供的高等教育學(課)程之數目正持續增加中。

此外，還有去年才成立的「澳洲大學品管機構」(Australian University Quality Agency)，這是聯邦政府及各州政府出資成立的獨立法人機構，成員包括聯邦政府、各州政府、大學及民間社團的代表。2002年起，開始監管澳洲所有大學的校務運作。以上大致就是澳洲的組織架構。

接著我想簡短地說明造成目前組織架構的一些因素。昨天有多位主講者曾經提過的，在此我就不再重覆。第一個因素，就是「高等教育的普及化」。過去十年來，澳洲高教學生的人數增加將近一倍。澳洲的高等教育已經從原來的菁英制度變成大眾化的普及制度。因此，澳洲的高教議題變成攸關大眾的公共議題。我相信貴國的情況亦是如此。

此外，一旦提到知識化的社會或資訊化的經濟，各級政府對大學在經濟發展中所能扮演的角色就有更加濃烈的興趣，我本來想說，「便想『插手』大學校務」，以便對大學能夠瞭若指掌。

第三個因素是澳洲以教育賺取外匯所造成的影響。澳洲的高等教育，如同盛極一時的羊毛和小麥出口，一年就為澳洲帶來四十億澳元的外匯總值。難怪聯邦政府及州政府對大學的教育品質及經營管理會非常注意。這也許是澳洲政府近十年來對於澳洲大學的品質會如此關切的最主要原因。

昨天已有許多關於這些議題的討論，在此我就不再重述。我想提一下目前澳洲各大學針對過去十年政府對大學品質保證的架構以及何謂適當模式的辯論。過去這兩年，大致已有某種程度的共識。譬如「澳洲大學品管機構」的成立，澳洲大學校長委員會不僅不反對，並且有四位大學校長擔任該機構董事會之成員。雖然此舉並不表示澳洲大學校長委員會全然支持政府對澳洲大學品管機構的每項政策，但大家對如何管理澳洲大學的品質，至少在2002年已達成初步的共識。

然而，還有一些議題是未解的。開宗明義的，而且是很重要的，就是大家對大學所應扮演的角色尚無定論。就普及化的觀點而言，大學應該提供多目標的多元化教育。在場的各位可能都是在菁英制度下受教育的。像我念大學時，只有百分之五的人口接受大學教育，如今，至少有百分之三十的人上大學，而實際數目可能還超過。現今二十一世紀初的大學，與三、四十年前的情況差距甚大。問題就出在大多數人仍以過去所謂好大學的評定標準來評定當今的大學。

普及化的大學就是好大學嗎？試問一下，入學門檻高、只接受少數人入學的大學就是高品質的大學嗎？還是說，這樣的高入學門檻只是證明該校不是有教無

類的好大學？看似簡單的問題，其實重點在於我們如何定義大學的角色，以及如何評定它的教學品質。「澳洲大學品質機構」在審核大學品質時，必須先決定該大學所扮演的社會角色為何；否則在評定標準上將難有共識。然而，問題的癥結在於：政府的政策希望大學提供多元化的普及教育，但一般公眾對大學的要求卻是質重於量。

大學如何在社會責任及市場需求之間取得平衡點，這是個極具爭議的話題。這又牽涉到如何評定它品質的問題。對一些地區性的大學而言，這更是重點的所在。我曾經跟敝校的董事會主席提過，如果他要我們賺錢的話，我們大可改成「亞洲商學大學」(the Undergraduate Business University of Asia)，這樣我們就可以賺到許多錢，但我們就不是一所澳洲的「大學」。我想在座台灣來的貴賓當中，有些應該懂得我所指為何。

但是，假如你辦的是一間地區性的推廣式教育大學，你當然必須提供許多多樣化的課程。而依照現今的經費撥款方式來看，可能有大多數的課程是入不敷出，需要另尋其他經費來源加以補助。在澳洲，其實有許多學生想學習各式各樣的商業課程，可是如果依辦校宗旨來決定該校的教學取向，則根本無法提供足夠的名額滿足學生的要求；可是當你把經費用在提供一大堆商學課程，又會有另一派人士會說，該校沒有提供足夠的多元化教學課程。問題在於，根據現行的經費撥款方式看來，這些多元化課程能否找到其他經費管道來維持呢？

目前澳洲大學的人文學科、表演藝術、視覺藝術以及某些理科之教學，有非常嚴重的問題存在，因為要提供這些課程所需費用相當昂貴。假如依市場導向而決定，有些大學大概不會提供這些課程。

儘管聯邦政府否認，多數的澳洲大學一直感覺到政府對大學經費的補助並沒有因學生人數的增加而提高。依比例算來，每位學生的補助平均數不增反減，這是個普遍的問題。此外，學生人數的增加和某些項目的補助其實不成比例。然而，澳洲的學生要求大學的課程採小班制，要由專任教授任課，而且要有一切最先進的教學設備和器材。在經費拮据的狀況下，澳洲的大學實在很難滿足這些要求。巧婦難為無米之炊，如此又如何能公正地評斷大學的教學品質呢？

在評定品質的議題上，還有另一個重要的問題未解，那就是新式教學法的評定。例如網路線上教學、跨國教以學及專科學分認可制。有愈來愈多的澳洲學生以及海外學生先修其他專科學院的兩年課程，其修習的課程被承認為大學學分之後，再研讀兩年的大學，即可拿到學士學位。事實上這些新的教學方式的品質是很難評論優劣的。

舉網路線上教學為例，究竟什麼才是好的線上教學模式？至今仍無定論。有人認為線上教學不過是課堂上課網路化而已。把上課的內容用錄影帶錄下，配合教材的說明，就是所謂的線上教學。我個人認為這是極差的線上教學模式。但現

今國內外對何謂高品質的網路線上教學尚無定論，尤其當線上教學是建教合作時，在決定如何評斷教學品質之前，恐怕得先釐清線上教學的目的為何。

線上教學、函授教學及其他教學模式的教學品質仍是個國際爭論的議題，大家對品質的認定尚無準規，那又如何能來評斷教學品質是達到國際標準的？在我發表的論文中引用了一些其他學者的看法，大家可作為參考。

澳洲目前所面臨的問題是，大學得花許多時間向許多不同的主管機構報告，我在引言中曾提到這個問題，Shergold 博士昨天也提過。就以敝校為例，我們必須花很多時間對各個不同的政府機關提出報告。我們將大多數的精力花在向主管機關報告上，因此根本很難有剩餘時間找出現有教學品質的缺失，進而加以改善。

澳洲各州政府審計廳的作法也有所改變。以前他們只管查帳，但是這些不對我味的會計師們，通常無趣又短視。他們除了查帳之外，竟然還決定插手大學的經營效率。於是我們得向這些對校園管理沒什麼概念的會計師努力解釋辦校的政策及方針，以便讓他們來決定我們是否有效地管理學校及運用資源。其實這樣的工作對澳洲所有大學而言蠻奇怪的，但這些州政府審計廳對這樣新的學習經驗倒覺得很有意思。現在我們所面臨的倒不是有效率的審計，而是他們所稱的審計的效益。

對我們而言，這其實很頭痛的事。這些一輩子獻身公家機關負責查帳的審計官員們，對大學的治校策略問東問西，可是實際上澳洲的大學有一半以上的經費並非來自政府部門。正如我剛才所講的，大學透過州政府審計廳及其他州政府或聯邦政府的眾多機構，間接對聯邦政府負責。我在書面稿中有把這些機構一一列出，在這種層層呈報的系統下，當然需要許多人力及資源。

很不幸地，澳洲大學品管機構正處於這一堆陣仗的中心。我認為澳洲應該徹底縮減這一連串的官僚體系。什麼樣的資料該呈報哪個機構，理由是什麼，這些都該明訂出來。Shergold 博士昨天也提到聯邦政府公共政策的制定正朝此目標前進，但我個人的經驗卻是官僚體系不但沒有減少，反而有增加的情況。

這樣的品管系統所費不貲，這也暗示我們得向不少的官員報告，一個完整的品管系統必須兼顧資訊的整合及呈報的制度，當然所需的費用不低。因此，清楚地界定系統的重點項目為何，才能把錢花在刀口上。

最後，將企業經營模式引進傳統治校模式曾引發不少爭議，早期在提到澳洲大學的品管議題時，很多人認為只要把企業那一套帶入校園即可。事實證明那樣根本行不通。也有許多大學引進某些企業經營模式，例如採用國際標準局的認證制，在大學行政運作上實施，效果倒是不錯。但是若把這套系統引用在教學品質的管理上，恐怕會行不通。如何用有系統且客觀的方式來對教學品質做出合理的評定，恐怕是值得現今全世界各大學體系共同來辯論的議題。

ASSESSING THE DEVELOPMENT OF PRIVATE UNIVERSITIES IN TAIWAN

Chiang Kao

President, National Cheng Kung University
Tainan, Taiwan, Republic of China

ABSTRACT

In Taiwan there are 143 universities and colleges, of which 85 are public and 58 are private. Some of the colleges are junior colleges, in that only two-year university-level education is provided. To assure the quality of higher education, the Ministry of Education, Republic of China on Taiwan (MOE) has been assessing the private universities since 1980s. In early years, only junior colleges are assessed at an interval of three years. Scholars and experts, most from prestigious universities, are invited to serve as the assessors. The assessment includes in-house examination of the materials prepared by the junior colleges and on-site visits of in-depth investigation. Results of the assessment are announced to the public and detailed reports are given to the colleges to be based for making improvement. Colleges with better performance will get certain amount of money as award to assist their future development. More important, the approval of increasing the enrolment as requested by the colleges is primarily dependent on the result of the assessment. This assessment enforces junior colleges to improve the quality of faculties, to increase the land area and building space, and to enhance the facilities. Starting from early 1990s, the MOE requires private universities, including four-year colleges to join the assessment. The main purpose is to assist private universities in accomplishing their medium-range plan so that the quality of education would be improved. General universities and technical universities are assessed separately. Based on the results, different amounts of money are allocated to the universities, and the amounts are publicised. On average, the money received by each university amounts to approximately 15% of their annual budget. As a contrast, a public university receives approximately 45% of the annual budget from the MOE. It is expected that the universities will strengthen their weak areas. The assessment has significant effects on the reputation of the universities, and consequently the job opportunity of their graduates and the willingness of the high-school students to enter the universities. Usage of the money allocated to the universities will be audited, and is a criterion of the next assessment. The passed assessments have significantly improved the quality of education provided by private universities. Recently, the MOE starts assessing public universities in specific areas, for example, general education, business, and medicine. The university as a whole is also encouraged to make self-assessment via partial funding of the expenses incurred. It is hoped that the goal of "pursuing excellence" set by MOE will be achieved in the foreseeable future.

BIOTECHNOLOGY: THE AUSTRALIAN SITUATION

Edwina Cornish

Deputy Vice-Chancellor (Research), Adelaide University

ABSTRACT

Australia is making a significant investment in biotechnology research that is being undertaken by universities, hospitals and medical research institutes. Current and growing strengths in biotechnology include the areas of health care, agriculture and the environment.

The Federal and State Governments across Australia have made a commitment to supporting growth in the biotechnology sector through promoting strong biotechnology research and assisting with the commercialisation of outcomes.

The public sector programs include a number of initiatives at the Federal level, announced in the recent Innovation Statement, (*Backing Australia's Ability*):

Doubling funds available for National Competitive Research Grants

Increasing infrastructure spending on Universities (Extra \$337 million over five years)

Establishing one or more Biotechnology Centres of Excellence (\$46.5 million over five years)

Supporting a Major National Research Facility program, to provide research infrastructure of major significance, both nationally and internationally.

Of 15 MNRFs, four in the biotechnology sector were allocated \$47 million. These were the Australian Proteome Analysis Facility, the National Centre for Advanced Cell Engineering Facility, the Australian Genome Research Facility, and the Australian Phenomics Facility.

A key element of the strategy for effective expansion of biotechnology research at universities relies on consolidating Australia's proven expertise in the areas of health and biosciences, agriculture and the environment. Collaboration between researchers is seen as a crucial way to reach critical mass and optimise progress.

There are two major models of cooperative biotechnology research. The first is geographical and occurs where universities, hospitals and medical research institutes are located in 'clusters'. Examples of such clusters can be found in Parkville, Melbourne, and the Waite and Thebarton campuses in Adelaide.

The second is provided by the more formal Cooperative Research Centre (CRC) program which promotes links between universities, industry and the public sector across Australia.

CRCs in the medical area include: Tissue Growth and Repair, Cellular Growth Factors, Eye Research and Technology, Discovery of Genes for Common Human Diseases and Diagnostic Technologies.

CRCs in the agricultural area include: Quality Wheat, Molecular Plant Breeding, Cattle and Beef Quality and Sustainable Sugar Production.

Organisations involved in, for example, the CRC for Molecular Plant Breeding are Adelaide University, the University of Melbourne, Southern Cross University, the Department of Natural Resources and Environment (Victoria), the International Maize and Wheat Improvement Centre (Mexico) and the South Australian Research and Development Institute.

Universities are also involved with biotechnology research through rural R&D corporations. For example, the Grains Research and Development Corporation Centre and Australian Research Council are contributing 20 million to the formation of a Plant Functional Genomics Centre.

In 2001, public funding for Biotechnology research was \$300 million, representing 9% of the total allocated to research and development.

It was recently estimated that universities contribute about 20% of biotechnology business innovation. In 2001, this innovation was supported by \$300 million of public funding for biotechnology research, representing 9% of the total allocated by research and development.



SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

**TRANSCRIPT
OF PROCEEDINGS**

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

FOCUS SESSION:

RESEARCH - BIOTECHNOLOGY

SPEAKER:

PROF EDWINA CORNISH

DEPUTY VICE-CHANCELLOR (RESEARCH)

ADELAIDE UNIVERSITY

PROF CORNISH: Thank you very much. It's a very great pleasure for me to be here this morning to tell you a little bit about what's going on in Australia in biotechnology, and it will by necessity, be quite an overview, but I'm very happy to take more detailed questions at the end of the session.

I thought for those of you who weren't biotechnologists we should start with just what it is. Essentially it's using natural science and engineering technologies in combination with an organism, be it a bacteria, a virus, a plant or an animal. The technology is used for the production of goods and services. The industries that this technology has application to obviously are very wide, from therapeutics, foodstuffs, diagnostics. The technology is being used extensively to improve existing industrial processes, particularly in the fermentation areas. The market applications are human health, food production, industrial bioprocessing and in the environment.

Universities in Australia play a very important role in underpinning the biotechnology industry in this country. We are a significant source of new ideas. Our projects range from the very basic and, increasingly, universities are becoming involved in commercial research that is linked directly with the activities of biotechnology industry. We are involved in research that is concerned with the diagnosis and treatment of diseases, and that ranges again from human to animal and plant health. Many of the universities have specialist biotechnology research centres, so there is much investment and focus in the country in biotech research. As you might expect, researchers have been very active in collaborating both nationally and globally to ensure that our research is competitive.

If you look at the investment that is going into biotechnology research in the country from public sources, \$30 million was estimated to go in, in 2001, and that represented 9 per cent of total public expenditure on R and D, so it's a big priority for the government. Interestingly, over the last 20 years, approximately 18 per cent of all biotechnology firms have spun out of university research. There are some interesting facts in regard to that which I found. That average varies quite considerably across the country. In the ACT, as you might expect, where there is not much industry, a very large proportion of the companies have come from the university. Here in South Australia also a very large percentage of the biotechnology companies in this state have come from university research.

Also, if you look at where business ideas have come from, you can see that the university plays an important role. The survey that Ernst and Young, Freehills and the Department of Industry, Science and Resources undertook in 2001, suggested that around 21 per cent of biotechnology innovations come out of university research, which I believe is a very significant achievement for the sector.

How are we supported to do this research? You've probably gone through many of these issues in previous sessions. Clearly we receive an operating grant from the Commonwealth government, but especially most of our research

is funded through a competitive grant system. The National Health and Medical Research Council supports research in the area of human health; the Australian Research Council supports research in other areas, and that is very extensive in agriculture, in the fundamental biosciences and in the environmental sciences, and then we have our Cooperative Research Centre program which has made a very significant investment into research in this country.

I will talk a little bit about the range of activities that is funded through that program, particularly in the biotech area. Our rural research corporations, which obviously for this country are very important in supporting R and D activity, are big funders of biotech research, as is a program called our R and D Start program which links university research to commercial development. So it has funding for new companies, new biotechnology companies which can be used to support research in the universities.

Quite recently the federal government has increased its investment into research in a number of ways and, increasingly, it's becoming more and more targeted in where it wants to spend its research dollars. Clearly, biotechnology is a very important priority for the Commonwealth at this time. They have doubled the funding going into the Australian Research Council. They have put extra money to support the development of our research infrastructure, which allows us to maintain a competitive position. They have put aside \$176 million for centres of excellence in biotechnology and ICT. There is extra money going into the Cooperative Research program and various other initiatives that are all designed to increase investment in areas of research, particularly those areas like biotechnology that underpin the development of new industries in this country.

The Biotechnology Centre of Excellence program was initiated last year and as of February 2002 there were 11 applications received. This will be an important initiative and we will hear soon as to which one of these applications - or there may be more than one - gets up. The selection will be very competitive. It will be based on the quality of the research but also the business linkages that these centres of excellence are able to forge. Again, it's the same thing coming through: there is this increased investment going into research, and particularly biotechnology, but in a way that will underpin the development and support of this industry.

The applications have been quite varied. They have ranged from the agribiotech area, through traditional genomics, and into bioprospecting. One of the important aims of these centres is to develop strong links with international research centres, so they will be seen very much as flagship centres for the country. We are hoping that through the development of these centres we'll be able to continue to attract leading biotechnology researchers from around the country and continue to build capability in this area.

The other important initiative that has taken place in the last year is additional money into our major national research facilities. Four of these were

established last year in the area of biotechnology: the Australian Protium Analysis facility which is headquartered in New South Wales, although there are nodes and there is one actually here in South Australia; the National Centre for Advanced Cell Engineering facility which is dealing with stem-cell technology; the Australian Genome Research facility and the Australian Phenomics facility. A total of nearly \$50 million of Commonwealth funds will be invested into these facilities and, again, you can see that that is a significant proportion of all of the government funding going into these centres, or these facilities.

Now a little bit about the Cooperative Research Centre program: this is, I think, a program that is unique to Australia. I think other countries are probably starting to copy it now, but it's been around for about 10 years, and it aims to link universities and public sector research bodies with industry. What the scheme attempts to do is to enhance collaboration and cooperation between our research institutions in a way that is relevant to the needs of industry in this country. There is a large amount of Commonwealth research dollars being used to support this scheme and those funds are typically or very much enhanced by the CRC partners, so the universities and industry also contribute funding to the establishment of these centres.

They are generally funded for about seven years. They represent small businesses in a sense because there are between about eight and 15 million per CRC. Currently we have 65 in the country. There have been 91 since the program started and to date 24 of those 91 have been in biotechnology. These centres are managed, as I say, as small business entities. There is very much a corporate style of management. Research priorities are set - strategies and priorities. There is particular emphasis given to postgraduate education in a way that prepares our research students for careers in industry. A number of companies have been spun out of these Cooperative Research Centres and to date, in the survey that I looked at, 23 had come out of 14 CRCs. There have been a number of commercial outcomes.

Just to give you some idea of the range of CRCs that we've established - I think this gives you a good overview of the nature of biotechnology research in this country, to get a bit of a feel of where these CRCs have been established - in medical science and technology, the fields have ranged from tissue growth and repair, which is a CRC that has been based here in Adelaide, through eye research, cardiac technologies, even Aboriginal and tropical health. So you can see very a broad range of medical problems with a biotechnology focus that are supported through this program. Again, it represents the overall field of biotech research that is occurring in Australia.

Similarly, in the environment, we're very conscious in Australia that we have unique environmental conditions that need Australian solutions. We're focused on developing technologies for sustainable production and forestry; tropical plant protection; preserving the ecology of our streams and rivers, through freshwater ecology; Australian weed management - weed invasion in Australia is a major environmental problem for us that we're attempting to address

through the application of biotech.

Very important, obviously, are agriculture and rural based manufacturing and, again, you can see there is a wide range of activity here through from molecular plant breeding to viticulture - which is the production of grapes, which is very important for our wine industry - and the sheep industry is an important one for us. So, again, you can see all of the industry sectors that are important for the country and there tends to be much research centred around developing biotech solutions to the problems that we're facing and allowing, or supporting the industry to remain competitive.

As I hope I've indicated, the commercialisation of biotech is becoming an increasing priority for universities and certainly it's a key priority for the Commonwealth government to see universities do a better job at commercialising its research. We've tended to do this in two different ways, either by having specific university staff who are involved in the commercialisation activities of the university, or set up independent companies - commercialisation companies that have the role of commercialising the intellectual property that has been developed through the university.

There has been considerable government investment go into enhancing this activity in Australia. As you would have gathered the CRC program is really a very major investment and it's very much directed at seeing the research base in the country move through to an industry outcome. The Start program is - there has been nearly half a billion invested over the last five years. Again, that is to support newly emerging companies develop their intellectual property through to a commercial outcome and is very much involved with linking that activity back into the research institutes.

Recently the government established a biotechnology innovation fund of \$40 million which was to give seed funding to new companies to get to a point where they might attract venture capital investment. Then, further back even still, the government has recently announced the establishment of a pre-seed fund which is to really get university research to a point where you might get that very initial investment. So it's all to do with driving through from our basic research and pulling that through into intellectual property and commercial outcomes that will build a new economy base in the country.

There are a number also of clusters and incubators that are being established around the country to bring researchers in close contact with one another, and also with commercial groups that will enhance the commercial uptake of our research. Some examples of the incubation of biotechnology research include the establishment of commercially funded incubators - so they're special purpose companies that will take a fee to support new companies develop new ventures - and there is an example in Sydney of Accelerator, which works with researchers to get them started in a commercial enterprise.

But there's also much government support in this area. Again, there are probably two ways in which government is trying to support incubation: one is

through what we call disperse networks, where research organisations such as universities, come together in a way across the country with a defined commercial focus. The CRCs are a very good example of that, as are probably going to be the biotech centres of excellence. They're likely to be groups of researchers that are scattered around the country but will have a common goal in terms of their research priorities and will be focused on moving through to the commercial phase.

The other model is around the development of clusters, so developing precincts in different states and different cities where you are bringing together research institutes and companies that have a similar interest. One very good example is the establishment of the Bio 21 initiative in Melbourne. That is an initiative of the Victorian state government. It's establishing four precincts in Melbourne. There is a biomedical cluster around Melbourne University in Parkville; there are two other biomedical clusters that are being developed around the Alfred Hospital and Monash University; then there is a fourth cluster which is around agriculture. Again, what the state government is trying to do is to make investments around the establishment, or the bringing together of researchers with a common interest.

Here in South Australia there is the development of a biomedical cluster at the Thebarton Bioscience precinct, which has a number of our spin-off companies established there, and also some incubating activity. We have the Waite Campus which brings together researchers from Adelaide University, the CSIRO, the South Australian Research and Development Institute and the Australian Wine Research Institute. So it brings together all of the major players that are involved in plant biotech in this state.

So you can see that state governments, along with their Commonwealth counterparts, are also making quite a significant investment in the development of this industry. In Victoria they have probably put in around \$320 million between 2001 and 2005; Queensland - it's estimated it's close to \$300 million; here in South Australia we're not as big, but we have established here a state government arm called Bio Innovation SA, and the state government has invested probably about \$30 million over the last five years and is looking at the potential investment of another \$42 million. Again, it's an important priority for this state.

It's interesting then to look at where the biotechnology firms are in the country. I was trying to see whether there was any correlation between state government investment and the development of this industry. I think it's true to say there probably isn't any correlation, but on the other hand I think different states will have different needs to make an investment. For example, New South Wales is where perhaps most of the business activity for the country is anyway, and I think it's true to say that they have not made the same amount of investment as, say, the Queensland government have, which has really seen biotechnology as an important industry for the future of their state.

So in summary, the Australian biotechnology is growing. I think it's growing -

I've been in it now for 15, maybe nearly 20 years - which is a bit scary. It's certainly much more diverse and it's much more mature than it was when I started off. Interestingly, I think universities are playing a very important role in the development of this industry. I think it's a different model to what you'll see in the United States, where there is much more of an entrepreneurial culture. I think here in Australia we are beginning to be successful in pulling intellectual property out of universities in a commercially relevant way. It is a priority for investment of the Commonwealth and also for the states - particularly states that are seeing the development of industry as important for their economic wellbeing.

I hope that gives you a little bit of an overview of what we're doing and where we're going. Thank you.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月9日（星期二）

專題討論：

研究 — 生物科技

演講者

阿得雷德大學副校長

EDWINA CORNISH 教授

非常謝謝主持人的介紹。今天我很榮幸來到這裡，向各位簡單地介紹關於澳洲生物科技研究的情形。這只是一個概述，但我很樂意在演講之後，較詳細地回答一些問題。

對於在場不是研究生物科技的人來說，我想先解釋一下它到底是什麼。基本上，生物科技是運用自然科學與工程技術，將它們以一個生物有機體結合起來，這個有機體可能是細菌、病毒、植物或動物，而這個技術可以用來製造商品或提供服務。應用生物科技的行業顯然非常廣泛，其中包括醫療、食品、診斷等。此項技術廣泛運用來改善現有的工業過程，特別在發酵的領域。市場應用方面則是人體健康、食品製造、工業生物加工和環境等等。

澳洲的大學對國內的生物科技工業扮演了極重要的角色，是新點子的主要來源。我們的研究計畫從非常基本的開始，而且越來越多大學參與商業的研究，這些研究直接與生物科技工業活動有關。我們參與診斷與治療疾病的研究，從人體到動植物健康都有。許多大學有專業生物科技研究中心，因此澳洲國內在生物科技研究方面吸引許多投資和注意。研究員理所當然積極與國內及國際的研究員互相合作，以確保我們的研究具有競爭力。

讓我們看看國內來自大眾對生物科技研究所做的投資：在 2001 年估計有三千萬，那代表所有在研發方面的市政開支的 9%，所以對政府來說，它是一大重點。有趣的是，過去二十年來，大約 18% 的生物科技機構從大學研究中延伸出來，有一些有趣的事實和我的發現有關。在國內，它的平均數差異很大。首都直轄區內，沒有太多工業活動，大多數生物科技機構來自大學。在南澳也是，有很大比例的生物科技公司來自大學研究中心。

同樣的，如果你仔細研究這些商業點子的來源，你可以看出大學也扮演了很重要的角色。一份由 Ernst and Young, Freehills 及工業科學資源部於 2001 年所做的調查顯示，大約 21% 的生物科技革新來自於大學研究，我相信那是這領域很重要的成就。

我們的研究是如何維持的？你可能在先前的講習會中已聽過不少這方面的討論。當然我們有聯邦政府的補助來運作，但大部分的研究經費，是經由一個競爭激烈的補助金系統作為資金。「澳洲國家健康與醫療研究委員會」(The National Health and Medical Research Council) 支持人體健康的研究，「澳洲研究委員會」(The Australian Research Council) 支持其他領域的研究，範圍很廣，如農業、基礎生物科學、環境科學等；我們還有「合作研究中心」(Cooperative Research Centre) 計畫，它對國內研究的投資不遺餘力。

我要談一下這計畫所提供資金的活動範圍，特別在生物科技領域方面。我們的鄉村研究社團法人，它是國內研發活動重要的贊助者，也是生物科技研究的一大資助者，有個計畫叫做「研發啟動計畫」(R and D Start program)，將大學研究

與商業發展結合起來。所以它提供新公司及新生物科技公司資金，這些資金用來支持大學研究活動。

最近聯邦政府在許多方面增加了研究的投資經費，因此它逐漸對研究經費的運用對象也越來越具體。明顯的，目前生物科技對聯邦政府來說，是優先考慮的重點。澳洲研究委員會的研究經費已增加兩倍，政府也增加經費來發展我們的研究基本建設，使我們能維持競爭的優勢。政府撥出一億七千六百萬，補助生物科技與資訊科技方面的傑出研究中心，也增加經費補助合作研究計畫和其他為增加研究領域的投資所設計的不同計畫，特別是支持國內新工業發展的生物科技領域。

「生物科技傑出中心計畫」是從去年開始，到 2002 年二月止就已收到十一項申請。這是一個重要的計畫，很快就會知道哪一個申請獲得補助，說不定不只一個。甄選過程競爭非常激烈，它根據研究品質來決定，也根據這些傑出研究中心所能創造的新企業連結來決定。此點再度證明，有越來越多的經費用在研究上，特別在生物科技方面；但同樣的，研究成果同時也幫助該域的發展。

申請項目的內容包羅萬象，從農業生物科技、傳統基因組、到生物勘探等都有。這些研究中的主要目標之一，在於與國際的研究中心發展穩固的合作關係，因此它們將被視為國內的旗艦隊。我們希望，經由這些中心的發展，我們能繼續吸引更多國內各地生物科技研究者，並持續加強這領域發展的潛力。

另一項從去年開始的重要活動，是一些主要的國家研究設備經費增加。去年有四個生物科技領域的設施成立：一是「澳洲氫同位素分析設備中心」(The Australian Protium Analysis facility)，它總部位於新南威爾斯，其中有一個分部在南澳；還有「國家高級細胞工程中心」，主要處理幹細胞科技；第三是「澳洲基因組研究設備中心」以及「澳洲特殊優異人才設備中心」。將近五千萬聯邦補助將投資於這些設施當中。你可以看出在所有政府經費中，有相當大的比例投資於這些中心設施。

現在我們來談一談「合作研究中心計畫」，我認為它是一個澳洲獨有的計畫。我想其他國家現在可能也開始跟進了，但它在澳洲已有十年，主要目標是將大學與企業有關的大眾研究機構相結合。這項計畫目的是要增加我們研究機構彼此的連結與合作，從事與國內企業需要相關的研究。許多聯邦政府研究經費用來支持這項計畫，合作研究中心的合夥者再增加許多的經費，因此大學和企業界也貢獻一些資金來建立這些中心。

經費補助期間通常是七年，造就了自成的小型企業，因為每一個合作研究中心有八百到一千五百萬補助。目前我們國內有六十五個中心，從這計畫開始以來，曾經有過九十一間，目前為止這九十一間中，有二十四間是在生物科技的領域。如我所說，這些中心是以小型企業型態來運作，以公司型態來經營。研究的

優先考量已定，是策略與優先順序。特別強調大學畢業後教育，以培育我們企業界的研究人才。到目前為止已有許多公司從這些合作研究中心延伸出來，我所看到的調查數字是，從十四間合作研究中心已延伸出二十三間公司，其中有許多已有商業成果產生。

這是要讓大家對我們已建立的合作研究中心的範疇有個概念，我想這能使大家對澳洲的生物科技研究的性質有個較清楚的認識，也知道這些合作研究中心的成立所在。醫療科技的領域包括組織成長與修復，它是一個以阿得雷德這裡為基地的合作研究中心，還有眼睛研究、心臟科技，甚至原住民健康與熱帶地區健康等。所以你能看到廣泛的，以生物科技為重點的醫療問題，在本計畫中進行。它再次代表了目前澳洲的整體生物科技研究。

同樣的，在環境議題方面，我們非常了解澳洲獨特的環境型態，需要以適合澳洲的方式來照顧。我們一直強調發展科技來維持生產與林業、熱帶植物保育、藉由淡水生態來保存河川生態、澳洲野草處理澳洲野草猖獗是我們的一大環境問題，我們正嚐試經由生物科技的應用來解決這問題。

農業與以農村為主的製造業顯然也非常重要，而且你也可以看到這裡有多種活動在進行，從分子植物繁殖到葡萄栽培術，這是一種葡萄的製造技術，對我們的造酒工業非常重要；綿羊工業也是重要一環。因此，你能夠知道所有這些對國家重要的工業，也知道有一個趨勢，就是有更多研究都在發展生物科技，以解決我們正在面臨且允許的這些問題，並維持這些工業以保持競爭力。

我希望我已經說明了生物科技的商業化，已成為大學優先考量的重點，它當然也是聯邦政府的一大優先考慮，樂見大學在研究商業化方面有優異的表現。我們打算以兩種不同方式進行，一是由大學特定人員參與大學的商業化活動，一是建立獨立的商業化公司，將大學中所發展的智慧財產商業化。

澳洲政府對這方面的項目投入頗為可觀的投資，合作研究中心計畫真的是一個非常大的投資，它的方向是將國內研究基礎轉移到企業的成果上，過去五年已有將近五億的投資在啟動計畫當中。這是為了支持新成立的公司發展智慧財產並轉化成商業機會，而且再將此商機回饋研究機構。

最近政府成立了四千萬的生物科技革新種籽基金，為了給新公司基本資金來達到吸引風險資本投資的程度。我們再往回看，政府先前宣布了前種籽基金的成立，為的是使大學研究獲得初步的投資。因此，這些都是將基本研究帶領進入智慧財產和商業成就的範疇，這些商業成就將能在澳洲國內建立新的經濟基礎。

澳洲目前有成立一些培育區和培育機構，使研究員彼此聯繫更加密切，且使研究員與商業團體彼此有較多接觸，以增加商業運用研究結果的機會。生物科技研究培育的一些例子，包括建立商業補助的培育單位，因此它們是有特殊目的的

公司，願意負擔一些費用來支持新公司發展新成果；雪梨有一個加速器的例子，就是研究員與企業合作，使他們能以商業應用的觀點來引導研究項目。

政府對此也非常鼓勵，有兩種贊助方式：一是藉著我們所說的傳播網，如全國各大學等研究機構，為了一個特定商業目的而聯合在一起。合作研究中心就是非常好的例子，它們可能成為生物科技傑出研究中心。他們可能是一群分散在國內各地的研究員，但有一共同研究目標，而且共同致力於將研究成果作商業的運用。

另一個型態是培育區的發展，所以將不同州與不同城市中，有相同愛好的研究機構或公司合併起來發展。墨爾本的「二十一世紀生物科技公司」(Bio 21)的成立就是一個非常好的例子，它是由維多利亞州政府所設立的，在墨爾本正在建立四個轄區：在 Parkville 的墨爾本大學附近有生物醫療區、在阿爾斐德醫院和模納士大學附近各有兩個生物醫療區，另外在農業區附近還有第四個培育區。對於這些有共同研究興趣的研究員，州政府嘗試投資在研究員的培育與彼此合作上面。

在南澳的瑟巴頓生物科學區，發展一個生物醫療區，瑟巴頓生物科學區已有一些延伸出來的公司成立，還有一些培育的活動進行。我們有偉特校區，它把阿得雷德大學、CSIRO、南澳政府研究發展機構、澳洲製酒研究所的研究員都聚集在一起；因此，它可說將本州參與植物生物科技的重要角色都集合起來了。

由此可見，州政府及聯邦政府共同對這領域作重大的投資。西元 2001 到 2005 年之間，維多利亞政府預計投入約三億二千萬元；在昆士蘭，估計將近三億元；在南澳這裡，我們並不大，但我們已建立了一個州政府的左右手，稱為「南澳生物革新中心」，州政府在過去五年已投資了大約三千萬，並預計再投入四千二百萬，它是本州一個重要的優先考量重點。

我們來看看國內這些生物科技機構在哪裡，州政府投資和某工業的發展是否有相關，我看來相關性應該不大；但我認為各州亦會針對不同的需要來做投資。例如，新南威爾斯可能是國內商業活動最頻繁的地區，但對生物科技投資數額可能不比昆士蘭政府那麼多，因為昆士蘭政府將生物科技視為該州未來的重要發展工業。

總結來說，澳洲生物科技正在成長，至少我是如此認為。我從事這領域已超過十五年，將近二十年，聽起來好像很久了，現況當然比我當初開始時變得更多樣化且更成熟。有趣的是，我想大學在這領域的發展上，扮演了非常重要的角色。我認為它和你在美國所看到的情況不同，美國是一個遠遠偏向於企業家文化的國家。我想在澳洲，我們正開始將大學的一些智慧財產，以一種與企業相關的方式，成功的引用在大學以外。生物科技是聯邦政府優先考量的投資重點，各州也是如此，特別是那些認為企業發展對它們經濟福利很重要的州政府來說更是如

此。

希望這能使各位對我們目前所從事的研究與將來的走向有個概括的認識，謝謝。

THE MEDICAL EDUCATION AND RESEARCH IN PERIOD OF KNOWLEDGE-BASED ECONOMY IN TAIWAN

Su-Ming Hsu, MD

National Taiwan University College of Medicine, Taipei, Taiwan

ABSTRACT

The key to Taiwan's future as a knowledge-based economy will be in our ability to move up the "industrial value chain" through collaboration with other industrial nations. Taiwan has both great strengths in applied research and development and a particularly outstanding record in manufacturing. Emerging from a manufacturing base to a knowledge-based economy is often difficult, as the problem of having to compete with the labour and transport costs of emerging economies like Mainland China. It would be a better idea to build on Taiwan's strengths, especially in the time of biotechnology era. Like the pharmaceutical industry, biotech depends very much on creative science. To meet future challenges and to improve the quality of medical education, research, and patient care, the medical center has put substantial efforts into the following three areas:

Integration of research: The 21st century will be the age of translational medicine. Researchers and physicians will be expected to move basic research findings expeditiously from the laboratory bench to the bedside. They will also be increasingly challenged to align the personnel, support services, and resources that enable study in the laboratory. In order to integrate research activities and offer better services to faculty members, the Medical Center currently operates several core laboratories. These include laboratories for cell identification and separation, protein chemistry, molecular interaction, and DNA/RNA analysis, as well as for genome information and molecular modeling.

Molecular medicine: The College is active on the frontiers of medical research. One of its major efforts has been to utilize molecular approaches to study the pathogenesis and treatment of diseases. These include formal and informal integrated research programs in the Hepatitis Center, the Oncology Research Center, the Graduate Institute of Clinical Medicine (a Ph.D. training program for M.D. physicians to conduct basic and clinical research), the Institute of Molecular Medicine, and all other graduate institutes of basic (preclinical) sciences. Collaborative research between clinical and preclinical departments is encouraged.

Biotechnology: The biotechnology revolution that has transformed and continues to change the landscape of health care, beginning at the benches of university scientists. The development of biotechnology will have a great influence on the diagnosis and treatment of diseases. It will also make a significant impact on the improvement of the economy in Taiwan, surrounding regions, and beyond. The proposed Hsin-Chu Bio-Medical Science Park will bring together investigators with complementary expertise and technical skills. A broad-based graduate-training program will provide students and young investigators with a wider perspective on their respective research areas. The program not only will enable trainees to utilize their training in academic science, but also will open other possibilities in their career development, including medicine, industry and other biotechnological applications. The main function of the Science Park should be to serve as a bridge between clinical and basic research.

National and international collaboration: Collaborative studies between the College, the Hospital, and other institutions both in Taiwan and in other countries, in a variety of fields, such as oncology, neuroscience, cardiovascular disease, hepatitis research, and molecular genetics are conducted actively.

Outcomes and results: The College and the Hospital have made significant progress in the quality of scientific papers published. The numbers of patent issued, technology transfer, and clinical trials have increased significantly.

ONLINE LEARNING AND INSTITUTIONAL CHANGE

Assoc. Prof. Bruce King
University of South Australia

ABSTRACT

There is consensus in the literature on higher education about the kinds of problems universities face at present. Common to these is the impact of changes in technology and the need for institutional commitments in infrastructure, technical support and professional development higher education institutions need to make to accommodate these changes.

There are a range of other interconnected issues: how teaching and learning are regarded, the nexus between program delivery and administrative matters, changing power relationships between teacher and taught, and even tensions between traditional notions of a university and an emerging organisational culture that accommodates more specific notions of social accountability, customer service and student diversity.

Some of the problems universities encounter involve their culture of individualisation, their capacity to bring about large-scale change, a commitment to a product-based model of off-campus teaching, and their capacity to engage in management-led change. How institutions respond to these problems will depend to a large extent on the degree of involvement of university management in overseeing necessary changes which will occur when:

The changes are congruent with the University mission,
Resources are allocated for their development and implementation,
An institutional rather than discipline-based approach is taken,
A view of student learning is adopted that is predicated on a sophisticated view of the desirable general outcomes of higher education rather than one derived from a discipline-based view of the emerging professional, and
The management infrastructure encourages and fosters collaboration to create an environment in which such a view of student learning can prevail in practice that is tangibly supported.

This paper considers how the University of South Australia approached the development of a technologically mediated teaching and learning environment over a decade from 1993. The proposed Future Learning Environment had three distinctive elements: a focus on student centred learning, an emphasis on the outputs, rather than inputs, of higher education, and a conception of flexible delivery of programs, technologically mediated, that would facilitate the achievement of the other two elements. These will be briefly discussed, but the focus of the presentation will be on the technological dimension of these changes. The base assumptions were that (1) IT applied to learning had to add value and be cost effective, (2) use of IT in teaching and learning was central to the University's mission rather than an option, and (3) new technologies had to be applied strategically.

What was proposed, the strategic decisions taken, and the commitments it made to rationalize effort in the improvement of the learning environment for students will be outlined and reflected upon. This environment, called UniSAnet, will be introduced and critical features demonstrated

ONLINE LEARNING AND INSTITUTIONAL CHANGE

Assoc. Prof. Bruce King
University of South Australia

PAPER

There is consensus in the literature on higher education about the kinds of problems universities in developed countries face as a result of developments over the last fifteen years. Bradley (1997:1) identifies:

- globalisation of economic systems
- rapid development of communications technologies which are revolutionising both the way we do things and our contact with people across the globe
- changing patterns of work and employment and
- growing economic and social inequalities within and between nations.

Reid (1997:1) generally concurs and Bottomley (2000) argues that education institutions in developed countries face a set of common challenges stemming from two decades of economic, political and socio-cultural change.

This paper considers the influence of one of these changes – the impact of communications and information technologies (ICTs) - on the patterns of teaching and learning within higher education. Changes in ICTs and their widespread adoption in most aspects of social and economic life generate specific pressures for a new, more flexible teaching and learning climate that those responsible for administering higher education institutions (HEIs) have to manage. Put simply, Universities have to accommodate the fact that in relation to teaching provision, they can no longer do what they used to do in the same way. Reid argues there is a recognition that “flexible modalities are both appropriate for and expected by a range of students, and that resource based learning and creative timetabling are likely to become the norm...” (Reid, 1997:1) The convergence of communications and computing technologies is opening up possibilities for higher education that will prove impossible to resist. The resources of the Internet and World Wide Web make possible both the provision of dynamic content and interaction between teachers and students, and amongst students, to an extent that has previously been impossible. For example, content can be enhanced by teachers at any point in the duration of a course of study even for students who never attend on campus or who may be located overseas, while immediate contact, both synchronous and asynchronous, between all participants in a learning transaction is now possible twenty-four hours a day, seven days per week. The constraints now are those of decision, rather than technology.

This kind of pressure impacts on the organisational culture of HEIs. The issue for management in many institutions is how to address the complexity of required changes in circumstances where there is likely to be both internal resistance and little scope for solutions involving significant additional expenditure. Common to any solution will be the need for institutional commitments in infrastructure, technical support and professional development of academic staff.

I want to elaborate on these three elements by considering the University of South Australia which committed itself in 1993 to transforming the learning environment for all its students by 2003. The principal characteristics of the change would be an emphasis on student centred learning, a focus on the outcomes of the educational process – embodied in an agreed set of graduate attributes – and adoption of flexible delivery of programs as an enabling mechanism to achieve the other two ends. Flexible delivery was seen as:

“the provision of learning resources and the application of technologies to create, store and distribute course content, enrich communication, and provide support and services to enable more effective management of learning by the learner. In particular, the concept involves a view of learning in which a teacher does not predominantly mediate the student’s experience.” (King, 1999a:271).

The argument was simple: student centred learning (wherein students are invited to exercise greater responsibility for the management of their own learning and are supported in doing so), the achievement of the desired graduate attributes (which involved opportunities to acquire and develop skills and attitudes beyond mere technical disciplinary expertise), were unlikely to occur if programs were not delivered flexibly, that is, in ways which fostered student choice, encouraged personal management of one's own learning, and created a range of opportunities to rehearse the desired graduate attributes in varying contexts. It was understood from the outset that technological and other infrastructural developments were necessary to facilitate student learning in this new environment. The base assumptions were that (1) IT applied to learning had to add value and be cost effective, (2) use of IT in teaching and learning was central to the University's mission rather than an option, and (3) new technologies had to be applied strategically.

These, with other considerations, shaped a series of decisions taken to strengthen the infrastructure of the University in a way that would facilitate more flexible delivery of programs, including:

- upgrading the local area network and IT architecture of the University in 1994-95,
- bringing together a range of administrative, support, and professional development resources into a single Flexible Learning Centre in 1995,
- committing to a single universal email system for staff and students in 1996,
- conceiving a single course authoring and delivery system in 1998, *UniSAnet*, which was implemented in 1999,
- launching a physical and online student support presence, *Learning Connection*, in 2000 which provided 7x24 services to students and staff, and
- creating an international online career service which linked curriculum, the graduate attributes, and employment opportunities through a single tool, *Experiencebank*, in partnership with TMP International, in 2001.

Technical support, beyond the conventional IT help-desk, was provided in a proactive manner, by creating the tools for a universal learning environment that required the lowest possible IT literacy in both staff and students. *UniSAnet* was developed inhouse, by staff of the Flexible Learning Centre, with support from the Information Technology Services Unit. Its characteristics are described later.

Professional development was provided through a service contract, established between the Flexible Learning Centre and each teaching Division, drawing upon the expertise of a group of academic staff who worked full time in professional development and learning support. Subsequently, they were complemented by a small group of technical staff who work on a one-to-one basis with academics to help familiarise them with the standard online operating environment.

Experience in the implementation of the changes required by *UniSAnet* made managers aware of a range of other interconnected issues in the application of ICTs to teaching and learning, including:

- how teaching and learning are regarded and valued within the institution,
- the nexus between program delivery and administrative matters,
- the changing power relationships between teacher and taught,
- the emergence of important, non-academic roles in the support of students, and
- tensions between traditional notions of a university and an emerging organisational culture that accommodates more specific notions of social accountability, customer service and student diversity.

These are briefly elaborated below.

How teaching and learning are regarded and valued within the institution

The teaching and learning environment envisaged by the University in 1993 was, as indicated above, characterised by a view of the centrality of students in the management of learning processes and the decision to determine the quality of the University's teaching arrangements by the value added to graduates during their time at the institution. These commitments were expressed in policy and compliance was not regarded as a matter of discretion for individual disciplines or schools. Again, this necessarily required programs to be delivered in flexible arrangements. Reinforcement of this determination to pursue a distinctive approach to fostering learning occurred through equally powerful commitments to the role of student feedback in course and program evaluation and the institutional

determination that student evaluation of teaching was an essential component of any application for promotion. The value positions embodied in such determinations were enshrined in the University's Statement of Strategic Intent which became the colours at the masthead of our educational enterprise.

The nexus between program delivery and administrative matters

Flexible delivery of programs means nothing if the administrative arrangements of the University constrain the options students have for exercising choice and personal responsibility in the management of learning. Too often, such administrative matters are organised for the convenience of the institution and not to support students. The University made a determined effort to centralise administrative arrangements through a 'one-stop-shop' office on each campus, called *Campus Central*, where students could get immediate resolution of all administrative concerns and were dealt with by staff who were trained in and valued a very strong customer service orientation. Similarly, the implementation of a new student information system, *Medici*, allowed all students to enrol in courses and tutorials online, from wherever it suited them to do so.

Changing power relationships between teacher and taught

Perhaps the greatest set of problems in implementing changes of the kind described here derive from the attitude of academic staff. Flexible delivery directly confronts the assumptions of transmission models of education and, for some academics, strongly held personal perspectives on their professional role. The value positions embodied in student-centred learning posit different roles for teachers, who need to move from an authority position as content specialists to the legitimacy that derives from successfully creating arrangements and establishing conditions that enable students to exercise responsibility for their own learning in legitimate and appropriately supported ways.

The technology also supports such change, as the Internet affords the able student access to a range of resources that potentially extend beyond the present knowledge base of teaching staff. The new electronic library system shared between the three South Australian universities, *Voyager*, provides students at each institution with online and other study resources that exceed those available at Harvard University ten years ago, when UniSA was being established.

Tensions between traditional notions of a university and a changing organisational culture ...

The University of South Australia has determined its role as an applied institution, committed to the preparation of graduates competent to enter the workforce with the attributes valued by their employers and a demonstrable basis for success as neophyte professionals. It has sought to implement this mission through a range of teaching and learning arrangements that emphasise the primacy of student interests in the educational enterprise and commit the institution and its staff to a culture of support and facilitation of those interests. This challenges conventional university culture on two grounds. First, it confronts notions of a liberal and non-instrumental higher education, admits a range of stakeholder views in determination of what counts as an appropriate professional training rather than relying solely on the authority of disciplinary expertise within the academy, and argues for a necessary justification of program development on grounds which go well beyond academic merit. Institutions of this kind can no longer sustain programs on the basis of academic, rather than client and stakeholder interest.

Secondly, as indicated above, the combination of the value positions embodied in commitments to flexible delivery, and the capacities for self-management of learning afforded students by the new technologies, confront conventional views of academic authority in the teaching context.

These tensions are exacerbated by other characteristics of universities, such as the strong commitment to a culture of individualisation, which is a concomitant of traditional notions of academic freedom. Frequently, individual innovators push ahead with new approaches to teaching enthusiastically, but essentially in isolation from other efforts. I have reported elsewhere a survey at a large Australian university in 1996 which identified about 80 instances of academics applying new media to education, with many having secured external funding, such that some A\$3 million was coming into the University. None of the developments acknowledged or was informed by any other, and it is worth considering what might have been achieved had that same amount been directed to a coherent program of online development (Forster, 1996).

Further, universities are typically large organisations committed to collegial models of decision-taking and where authority is variously located on quite different bases of status and expertise. In comparison with other organisations that espouse a customer service orientation, they appear to operate *inter alia*, on unrealistic time frames, ponderous and sometimes ineffective decision-making processes, and little sense of the process management necessary to bring collaborative activity to resolution.

A particular concern in relation to the potential for online delivery that affords students real flexibility and choice, particularly freedom from the constraints of time and place that are a feature of much conventional higher education, is a commitment to models of online delivery that either seek to emulate the characteristics of on-campus, group-based teaching. There are many examples of this in both the United States and parts of Asia. Some are driven by technological capacity, eg the existence of a broad bandwidth that enables, say, videoconferencing. There is an important question here. Should we be seeking to replicate experiences that were possible and became valued historically because all students attended their lecturers on-campus as a matter of pragmatic convenience, or look to the possibility of new forms of delivery that enable achievement of educational gains that take us beyond previous practice?

Another example of constrained thinking in relation to online delivery involves a vision of quality that derives from a product-based model of teaching. In part, this reflects the history of distance education in its 'correspondence' period, when quality was largely judged by the learning resources provided for students. The course materials of the Open University of the United Kingdom were frequently regarded as standard-setting in this regard. These excellent teaching resources were complemented by face to face contact with locally available tutors. When the assumptions of this approach to teaching quality are not challenged, we find academics focussing on content to the exclusion of more important teaching activities, i.e. they are using the resources of the Web to generate a costly and personally demanding form of content provision that replicates what is available from other sources (eg textbooks) and which, at undergraduate level at least, is remarkably homogeneous within discipline areas and constitutes an enormous waste of time. Increased attention must be paid to the capacity of online technologies to foster greater degrees of student to student, and student to staff, interaction, and the efficient delivery of guides to study, whereby content is accessed from a range of resources, from textbooks to virtual libraries and the admittedly mixed treasury of the Internet.

It is my strong view that the movement of any University to successful online delivery of teaching and learning programs requires strong management-led change, acknowledging that any management initiative in relation to teaching and learning must be generic and dependent for success on individual academics recognising and committing to what is being proposed by interpreting it within the specific context of their discipline. I have contended that management has access to certain understandings and perspectives that facilitate the initiation and macro-management of large-scale institutional change – such as the kind that UniSAnet represents – that differ from the views of academics who see themselves principally as disciplinary experts, for example through:

- familiarity with and commitment to the institutional mission and policies;
- understanding the context within which higher education institutions operate;
- knowing the debates about higher education in general, rather than focusing on discipline-specific concerns;
- being aware of the data derived from national or other central sources, and viewing these from an institutional perspective;
- having a view of the students' needs from a social and economic perspective, rather than intimate knowledge of the expectations of individuals, or even class groups; and
- being concerned with institutional reputation, rather than the academic excellence of a particular discipline or field of study (King, 1999b:5).

Earlier I introduced the way the University of South Australia approached the development of a technologically mediated teaching and learning environment over a decade from 1993. I want to consider some of the assumptions and strategic decisions that underpinned that development as a practical example of the considerations about managing university change raised above.

First, what is UniSAnet? It is a University-wide presence on the World Wide Web that introduces our staff, programs and courses to an international audience and supports our students with learning and administrative resources that enable them to exercise study choices and assume a degree of personal responsibility over their own learning.

In developing the conceptual framework, I wrote:

UniSAnet will be a coordinated teaching and learning facility which stands as an additional dimension to the University's existing teaching and learning program. Its purpose is to add value through increasing the quality and flexibility of course offerings by extending choices both to academic staff and to students. It should also secure efficiencies in program delivery and extend the capacity of the University to make its programs available to a greater number of students, nationally and internationally. The teaching programs and support services of the University should be presented to current and potential students in an accessible and integrated fashion. Finally, it should assume the widest possible range of student and staff expertise in relation to using information technologies. (King, 1998:4)

Because the University had constrained resources, the proposal had to acknowledge that to have any chance of success. To make something substantial with limited funds meant there would be no room for mistakes. For a mix of strategic and pragmatic reasons, it was agreed that:

- The technological developments should be as simple as possible;
- Emphasis should be on adding value to existing offerings, particularly distance education materials;
- Initially the focus should be on transforming those existing resources to make them more accessible and interactive;
- Staff and students should be able to operate UniSAnet using a standard browser without further specialist software; and
- This basic platform would be the standard for all, from which more comprehensive developments could be built.

UniSAnet has the following characteristics:

- It is a common and universal approach to online learning across the University
- It is low cost and involves non-committed technology
- It presumes the lowest possible level of staff and student IT literacy
- It provides a consistent interface for students
- It links web pages to data bases and provides capacity for direct input by staff
- Staff enter data directly online without specific IT skills using templates and wizards
- It avoids the risk of non-migration of intellectual property over time
- It is based on teaching assumptions that are scaleable
- It minimises risk but does not eschew risk-taking
- It contains backroom support to an acceptable level
- It acknowledges the effort necessary in arranging opportunities for quality learning experiences

The advantages it affords the University are that:

- It provides a framework for success for non-IT specialists
- It enables schools and teaching teams to concentrate on supporting learning rather than mastering the technology
- It moves us safely from a cottage-industry to mass-customisation model of online delivery
- It is a low-cost model that holds our options open
- It has enabled us to trial online delivery across the range of University teaching, administrative and support services in the absence of strong, working alternative models
- It builds on existing commitments, eg to Microsoft Exchange as a common email system for all staff and students

UniSAnet was developed to provide three critical features: interoperability, scaleability, and functionality, which were acknowledged to be in descending order of importance. To elaborate, it was seen as absolutely critical that the teaching and learning environment be able to interact with all other necessary University online systems. Thus, with a single logon and password, students are able not only to access study resources, but also all other information the University holds that is pertinent to

their engagement with it, ranging from parking fines through virtual library resources to the full record of their academic results.

Secondly, and deriving from our experience with production scheduling problems in earlier distance education delivery, we determined that UniSAnet would be scalable to any number of students, in any number of courses, taught by any number of academic staff, without additional production work. This has been achieved.

The specific functional features were seen as less important than achieving these other two ends. This is not to deny that a growing range of tools has been added to the basic model, but our intention was to add value to all programs. When new developments are required, support is provided, with the understanding that once tested, such elements will be incorporated into the base model. Features that have been added to the basic course authoring platform include:

- *Tellus*, a survey instrument that enables immediate analysis of data
- *AssignIT*, an online assignment submission, recording and return system
- *Transcript2*, an online tool whereby students can document their experience and success with the Qualities of a University of South Australia graduate and prepare specific job applications that call upon one or more of these qualities
- *Experiencebank*, which links Transcript2 to TMP International's Monster.Campus and affords our students access to an international data base and search capacity for employment
- *The Course Evaluation Instrument*, which is intended to provide student feedback on courses for mandatory use in the evaluation of programs
- *The Student Evaluation of Teaching* instrument, which provides student feedback on teaching and is mandated for staff seeking promotion
- *LookUp*, a student portal which is capable of individual customisation
- *Learning Connection*, which provides student support materials in a very broad range of areas on a 7x24 basis
- Home pages for all staff, courses, and programs

UniSAnet has been used for three years and the website averages more than two million hits per month. Version 2 has been developed by *KnowledgeSouth*, a wholly owned company of the University, and trialed in delivering a Masters Degree program jointly taught by The University of Adelaide and the University of Texas. It is undergoing further trial in about 25 courses at UniSA during the present semester and will be rolled out for all courses in second semester this year.

Apart from simplicity of use (staff can create web materials from standard Word documents, with all the flexibility of editing and presentation they offer), UniSAnet version 2¹ has the following characteristics:

- It allows use of templates that accommodate any approach to learning design, eg simulations, problem-based learning
- It enables CD ROM material to be developed from its websites
- It enables editable and high quality print materials to be extracted from online resources
- It uses web-based wizards that enable staff to customise their personal interface within an overall consistent style
- It offers the capacity to author with UniSAnet directly to MS Office 2000 or any HTML authoring package
- It allows easy integration of such learning tools and surveys and discussion groups into a flexible and customised interface
- Its use of IMS and SCORM specifications allows import and export of content or other learning objects
It integrates with recent developments in other aspects of the University's online environment, such as the Medici Student System

As resources allow, we will move to:

- Enhanced virtual collaboration tools, including audio and video
- Intelligent search capabilities
- Enhanced evaluation, quizzes, and self-test tools

- Customised learning paths based on performance, activity, date, etc.,
- Enhanced problem-based learning and simulation generators for interactive learning
- Secure e-commerce capability
- Multiple languages for international use
- Progression to next generation wireless portable devices

The University of South Australia does not believe it has all the answers to program delivery using Cites, but it has achieved a relatively low-cost solution that is capable of adding value across the breadth of its academic programs. What our experience suggests is that our success to date is in large part dependent on the degree of involvement of university management in overseeing the necessary changes and that these are more likely to occur when:

- The changes are congruent with the University mission,
- Resources are allocated for their development and implementation,
- An institutional rather than discipline-based approach is taken,
- A view of student learning is adopted that is predicated on a sophisticated view of the desirable general outcomes of higher education rather than one derived from a discipline-based view of the emerging professional, and
- The management infrastructure encourages and fosters collaboration to create an environment in which such a view of student learning can prevail in practice that is tangibly supported.

ⁱ Information about UniSAnet Version 2 was prepared for presentation purposes by Ian Reid, Coordinator: Online Services, from the Flexible Learning Centre of the University of South Australia and is used here with permission.

References

Bradley, D., (1997) 'Inventing the future: Australian higher education responses' keynote paper to the Third Indonesian Distance Learning Network Symposium, *Distance Education and Open Learning: Future Visions*, Bali, Indonesia 17-20 November.

Forster, A., (1996) Personal communication.

King, B., (1998) *Establishing UniSAnet: The online environment of the University of South Australia*, internal paper of the University.

King, B., (1999a) 'Distance Education in Australia' in *Higher Education through Open and Distance Learning, World Review of Distance Education and Open Learning: Volume 1*, ed K. Harry, p. 271, Routledge, London/Commonwealth of Learning, Vancouver.

King, B., (1999b) 'The writing on the wall: the need for centrally led student support' paper presented at the Open University's Cambridge Conference on Open and Distance Learning, Maddingley Hall, Cambridge University, Cambridge, 28 September- 1 October.

Reid, J., (1997) 'Summary of discussions', paper prepared for the Higher Education Council and the National Academies Forum: Joint Seminar on the Undergraduate Curriculum, University House, Australian National University, Canberra, 6-7 July; online at <http://www.deetva.gov.au/nbeet/hec/publicat/curricsem/reid.htm>



**TRANSCRIPT
OF PROCEEDINGS**

SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

FOCUS SESSION:

TEACHING AND LEARNING - ONLINE LEARNING

SPEAKER:

ASSOC PROF BRUCE KING

DIRECTOR

**FLEXIBLE LEARNING CENTRE, UNIVERSITY OF SOUTH
AUSTRALIA**

PROF KING: What I would like to do is indicate that this presentation is a very shortened version of a larger paper I have written - about 4,000 words - which will be available immediately after this session at the desk outside, and I have deliberately avoided going into some of the broader arguments that are included in the paper for the purposes of this presentation. I'd like to thank the conference organisers, I'd like to thank Prof Hancock for her introduction to me, and I would also like to say I am delighted to be presenting in the same session as President Ted Yang, so I am very honoured to be here.

What I want to do is to introduce the whole question of online learning and institutional change, and I take up a point that Prof Hancock raised. I believe that the impact of the new information and communication technologies is transforming higher education and is obliging us to do things in ways that we have never considered doing things before, and that's elaborated in the paper itself.

I think that developing nations are facing a number of challenges and there seems to be a consensus in the literature about these changes. A common thread is that institutions have to respond to the impact of the development of information and communication technologies, and I believe the impact of these changes requires universities to reconceive the way they regard the delivery of teaching and learning programs. I think that those responsible for managing universities have to deal with changes in the learning environment as an instance of major institutional change. I believe that the changes to the teaching and learning environment, the changes to the core business of universities, are such that those people who are responsible for administering institutions are facing a major dilemma in terms of their capacity and the strategies that are available for bringing about the necessary changes that they will have to engage with.

ICT's impact on teaching and learning allows the provision of dynamic content and interaction between teachers and students, and students to students, wherever they are located and whenever the students choose to study, to an extent that's previously been impossible. I think that we are looking at a flexibility, in terms of student choice and the delivery of programs, that goes well beyond anything even those of us that were experienced in distance education have confronted in the past, and students will come to expect flexible delivery modalities and these will become the norm in our institutions.

In fact, in an earlier paper I argued that the Australian experience of mixed mode delivery whereby we teach both distance programs and on-campus programs in the same universities, well places us to deal with these particular issues. The constraints that are on teaching and learning are now very much a matter of academic decision than the limitations of the technology. The technology allows us to go further than many of our academics would choose to go, and I think that that's a very interesting situation for us to be in.

One of the issues for management that comes out of this is how to deal with these changes in a climate of some internal resistance, and in the paper I talk

about the threats to the organisational culture of universities posed by the development of ICTs and often, particularly in the case of Australia, budgetary constraints, because there is no doubt about it: what we are looking at is a much more expensive initial form of delivery.

Successful strategies, I believe, will require institutional commitments in terms of technological infrastructure, technical support for academic staff and the professional development of academic staff, and in the paper I elaborate on each of those, drawing on the experience of my own university, and there is quite a bit of discussion about those three things. We began a process of building the infrastructure in 1993 with a view to achieving a new environment by next year, 2003, and that involved strengthening the telecommunications backbone of the university, building the local area network, establishing a common email system. We had initially 27,000 accounts on Microsoft Exchange, which would have made us probably one of the largest exchange sites in the world - certainly in the Southern Hemisphere - and that has grown enormously since then. All of those things I have discussed in the paper.

Flexible delivery. This was a commitment that the university made as part of a larger agreement with the Commonwealth that it would change its teaching and learning profile, and by "flexible delivery" I mean the provision of resources and the application of technologies to create, store and distribute program content and to enrich the communication processes, and to provide support and services to enable both more effective learning and better management of learning by the learners themselves. This is a very important concept in my university and we are committed to this particular view of the teaching and learning framework.

It was understood from the beginning that we would not be able to achieve other goals in our mission of student centredness in learning or fostering a set of agreed graduate attributes which we call the graduate qualities, unless we provided two things: opportunities for choice and self-management on the part of students and, secondly, the tools and the support mechanisms to enable students to exercise choice and to manage their own learning with some chance of success. That was a very important part of our thinking.

What I wanted to do was to show you how we built success in for all of our staff from the very beginning. Automatically when a person becomes a staff member of the University of South Australia, they get a home page without them doing anything, and everything above the line is drawn from four different databases in the university: the room allocation database, the telephone database, the Microsoft Exchange database and the human resources database. It's created automatically. I can't change anything above the line, but I can add anything I wish to below the line to personalise my own home page.

I'm just going to scroll down to the bottom of my home page. I've got all of my publications and things and everything else there, and you will see down at the bottom there's a Change button. If I click on the Change button, a series of screens comes up, and to alter my own home page all I need is to key in, into a

blank rectangle, the information I want to go on the home page, and I can cut and paste from any Word document into that space and, having done that, my home page is automatically generated. It is as simple as using email. If you can point and click and key in information, you can author to the Web.

We did that very deliberately, and I am showing it to you for two reasons. The first is, I want you to understand how simple the process is for authoring online using the tools that we have created and, secondly, what I wanted to show was that by building success for our academics we generated a confidence about doing more online.

We also provided a range of support for academic staff. This is Learning Connection. It is a site which provides both resources for students and resources for staff, and I'm going to look at the staff resources first of all. We have a range of links to an enormous wealth of material which is on the Web. I'm going to go across to the top of this second column, which is The Evaluation of Courses and Programs. If I click on that, I find that there is a whole range of material which is available in either Word full text or HTML full text so that academics can download and have handy reference materials on all of the issues that relate to the university's evaluation policy.

There are guides to student assessment, there is overview of all of the evaluation instruments that have been created within the university, and there's a whole range of material about evaluating the generic attributes, the graduate qualities, that we say our graduates achieve. So that's the kind of resource that we have made available to support both staff and students.

One of the things that happened when we became involved with ICTs and their application to teaching and learning was to realise that there were a range of other issues that we were going to have to confront, and I discuss each one of these in the paper: how teaching and learning are valued; the nexus between program delivery and administrative matters. There is absolutely no point in having an online flexible teaching environment if your administrative arrangements constrain the way students have to operate within the institution. The changing power relationships between teacher and taught: expertise in academe is very much the basis of disciplinary authority and what we are finding now is that our students have access to a range of resources that are much greater than anything that they have previously contemplated.

There is a shared library online environment between the three universities in this state, the University of Adelaide, Flinders University and the University of South Australia. That means that for a student in my university there are more resources available than in the Harvard University library 10 years ago when my university was established. There is an enormous wealth of resources available online now.

I think that major changes of the kind that online presents require us to engage in significant management leadership. Obviously, any change to teaching and learning that management initiates has to be generic and it will require the

discipline based support of our teaching academics to be implemented, but I believe that there are gains to be made from large-scale change attempts that are shaped by the perspective of management rather than by discipline groups. I am not going to elaborate on that, except to say that in the paper there is a developed argument about why I believe the managers of institutions have perspectives which facilitate the implementation of such a large change as is constituted by the impact of information and communications technologies on teaching, and why we must avoid going back to the cottage industry of individualised approaches that has characterised so much distance education and, in some institutions, online delivery.

UniSAnet is the environment that we created for teaching and learning within the University of South Australia. It's a university-wide presence on the World Wide Web that introduces our staff through those home pages, it introduces all of our courses and the subjects within those courses, and supports students with learning and administrative resources, and it has promotional, administrative and educational dimensions. One of the things that we know is that in comparison, say, with the University of Melbourne or Monash University, we cannot market overseas simply on the basis of the strength of our university's name, but what we can do is make the materials that we use in our teaching environment available for people to peruse and to examine so that they can make a choice on what value we are likely to add as part of their experience, rather than marketing our programs on our name alone, and we have been very successful in doing that. We have a larger number of students offshore than any other Australian university.

When we moved to create our own environment, we took a series of decisions based on these assumptions. The first was that the technological development should be as simple as possible. Secondly, our emphasis should be on adding value to existing offerings, particularly our distance education materials. Thirdly, the focus should be on transforming those existing resources to make them more accessible and more interactive as a result of the online environment. Staff and students should be able to operate the UniSAnet environment using a standard browser without any further specialist software, including plug-ins, and the basic platform would be the standard for all across the whole university, from which more comprehensive developments could be built. My unit in fact helps individual academics who want to develop new tools, but the trade-off is that once they have been developed and trialled, they then become part of the standard base environment for the whole university.

The characteristics of our UniSAnet. It's common and universal across the university. You are not allowed to develop course materials in any other environment, so we do not use WebCT, we do not use Blackboard or any of the other authoring environments. We have some residual involvement from some of the very early innovators on Lotus Notes, and in one or two areas - for example, in the school of computing and information systems - we acknowledge that they need to be able to develop materials that are Unix based because of the particular requirements of their programs, but in general it is a common approach.

It's very low cost and involves non-committed technology. It's built on Microsoft NT technology. It presumes the lowest level of staff and student IT literacy, and I argued that this had to be the case, because I had to be able to use it. My view was that if I could use it, anyone else would be able to. It provides a very consistent interface for our students. It links web pages to databases. Any database of the university that contains information that is required by students can be accessed using one log-on and one password across the whole university, and we have done that very deliberately; interoperability was a value.

Staff enter data directly online without specific IT skills, using templates and wizards and web pages that guide them through the process. This is an example of just one step in a very early wizard that we developed, but what I'm trying to show is that this wizard incorporates some basic instructional design. This is the third step in a series of about 11, and it's asking the academic to structure their teaching materials. It provides an explanation:

A learning guide contains a number of modules. These may be called sections or papers or topics. How many modules do you want to have?

And you can enter any number in there.

What would you like to call them?

Some people call them a week's work, a topic, a module. Simply by clicking on that and then clicking on a series of other stages in the wizard, we provide blank study guides that are shaped with a very strong instructional design component, and it is one small part of the way we approach quality issues.

Other characteristics. It avoids the risk of the non-migration of our intellectual property over time. It's based on teaching assumptions that are scalable. One of the things that I was absolutely determined was that when we had academics authoring materials online we should not need to do post-production work to make that operable. We got into a problem with our distance education materials by insisting that all print materials go through a professional editing process. That created an enormous bottleneck and meant that we had to have academics submitting work to go to the editors six months before they required it for teaching. That was a nonsense, and so what I wanted was a situation which could accommodate any number of courses, any number of students, without any further technical work.

It minimises risk, because it makes very few demands on the academic staff, but it does not prevent them from taking risks if they want to engage in innovative teaching. One of the groups that teach medical radiations in fact has experimented very successfully using problem based learning online. That was a risk for them, but it's now become part of the mainstream of our teaching resources. It contains backroom support to an acceptable level and it

acknowledges that there is real effort in providing a quality learning experience, and what we want is for the academics to focus on the teaching and learning and content issues and not be focusing on the technology.

The advantages for the university? Well, it enables non-IT specialists to have success. It enables schools and teaching teams to concentrate on supporting learning rather than mastering new technology. It moves us safely from a cottage industry to mass customisation. It's low cost. It's enabled us to trial online delivery across the range of university teaching, administrative and support services in the absence of strong working alternative models, and it builds on existing commitments, for example to Microsoft Exchange.

There were three critical design features: interoperability - what we did in teaching and learning had to be able to link to any of the data that we keep in the university; it had to be scalable to any number of students or courses; and then there were key issues about functionality. But interoperability and scalability were more important values than the way that we actually provided the tools for working online. Functionality came third.

We have built in a number of additional features. TellUs is a survey instrument which enables staff to create automatic surveys for stakeholders or for students and to have them automatically processed online. AssignIT is an online assignment submission, recording and return system which protects the assignments of students because we keep them on a server for seven years, so there's never an argument about them being lost. Transcript2 is an online tool that we have provided students with to record their development and success with the seven agreed graduate attributes that we require of our students. Experiencebank is an Australian first and it links Transcript2 to the worldwide resources of TMP Worldwide, which is a major international employment placement company, and enables our students to have access to the resources sought by employers from around the world.

We have a course evaluation instrument which is mandated for use in every course every year. We have a student evaluation-of-teaching instrument so that students can online-evaluate their teachers and, to get promotion in my university, you must show cumulative improvement in relation to the student evaluation-of-teaching instrument over time. We have a series of portals for students called LookUP, where the student can get any personal information they require that the university holds about them, and Learning Connection is our online staff and student support site that I have already shown you.

We have web pages for all staff programs and courses, and we put all of our resources onto a CD-ROM which we call Get Connected. We include software for downloading so that students who are unfamiliar with the ICT environment can move online easily, simply by inserting a CD-ROM into their player.

We are moving to a second version of UniSAnet which has been trialled with the University of Adelaide and the University of Texas through a commercial company called Knowledge South, which we run. It's wholly owned by the

university. That will be introduced in my own university in semester 2. It's being trialled this semester in 25 different courses, and that takes us well beyond the capacity that we have had for the last three years, but our success over the last three years has been significant. UniSAnet averages two million hits per calendar month on its site. It's an extremely powerful teaching resource and, as time and resources allow, we will move into a whole range of additional developments.

I'm going to terminate my presentation there. I just want to take up very quickly the issue of quality, because it was raised and my vice-chancellor very conveniently handballed it to me. I should say that there are four approaches to the management of quality online within the university. The first is generic. That is, we have an overall framework for planning and review which all parts of the institution have to submit to on an annual basis. So on 29 April, my unit and my coordinator of online services will be facing the senior management group and can be interrogated about what they have done, but that also occurs for the pro vice-chancellors in charge of each of our teaching divisions, and they have to be able to argue the case for quality to their senior management colleagues.

The second thing is that we engage in a proactive approach to quality through the professional development of academic staff. I have a team of academic staff members who do not themselves teach any longer but who are involved full-time in professional development of other academic staff and who provide specific support around online teaching and learning. At the most simple level, we have a group of online advisers who are available to go and sit with an academic staff member in their office and to help them through the process of creating teaching materials if they feel that is necessary.

Thirdly, we have attempted to structure the process of moving online through the templates and wizards that I demonstrated, which embed good instructional design. And, finally, all of our courses are evaluated each year using an anonymous online instrument for student feedback, and there are 10 questions out of the 40 questions that relate to online delivery and that evidence has to be produced as part of the review process at the university.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002 年 4 月 9 日（星期二）

專題討論

教學與學習－線上學習

演講者

南澳大學彈性學習中心主任

BRUCE KING 副教授

首先我想說明的是，這場演講是一份我所撰寫約 4000 字的長篇報告簡略版，待會兒演講結束後，各位可在外面的桌上取得這份報告，但考量到本報告的中心議題，我將不針對部份論點多做闡述。我要感謝主辦單位，謝謝 Hancock 教授的引言介紹，同時，我很榮幸能蒞臨這裡，與楊濬中教授一同出席同一場次。

今天我主要想和各位談談線上學習及組織轉變可能帶來的種種問題，我同意剛剛 Hancock 教授提到的論點，我相信新的資訊及通訊技術，不僅足以改變高等教育的原貌，也能讓我們用種以前從未思考過的方式來處理事情，而這正是報告討論的重點。

我認為，發展中國家正面臨幾個挑戰，而現有的文獻似乎也對這種情況存有共識。這些文獻不約而同地指出，組織往往必須因應資訊及溝通技術發展所帶來的影響，做出適當回應，而我相信這種種的改變，將會使各大學重新調整看待教學及學習課程傳遞時所抱持的態度。我認為，大學管理者終得面對學習環境變化之類的重大變動，尤其是涉及到管理者的實際能力、經營策略和隨之而來的必要改變時，教學及學習環境的改變，或大學核心任務的改變，將會使組織管理者陷入兩難局面。

涉及到教學與學習，資訊傳播技術足以影響動態教學內容和師生及學生間的互動關係，使其不受時空及學習內容的侷限，達到過去所無法到達的層次，而這與我們在面對學生的選擇或課程的傳遞上一直在尋找的「彈性」是不謀而合的，所謂的「彈性」應該是指能跳脫在一切事物以外，就連過去我們就遠距教學所獲得的經驗在此時也應一併摒棄，學生所期待的是充分具有彈性的傳遞型式，而這正是組織的運作基準。

事實上，在過去的報告中，我曾提出澳洲人在大學階段，因為同時接受遠距教學和實地校園教學，他們所經歷的是一種型式混合的傳遞模式，而這正給了我們討論此類特殊議題的最佳機會。現今教學與學習所遭遇的限制，通常來自學術上的決策，而非技術發展上的瓶頸，技術能給予我們的往往遠超越學術決策，這讓我們陷入了一種相當匪夷所思的處境當中。

這當中所浮現管理方面的爭議，將是如何在內部具有障礙的環境中克服問題。我在論文中提到，大學的組織文化所遭受的威脅，通常來自資訊傳播科技的發展，而以澳洲的情況來說，預算限制則是最大的障礙，因為無庸置疑的，我們尋求的是種更為昂貴的傳達新媒介。

我相信，成功的傳達對策將需要組織就技術的基礎建設、對教學人員的技術支持，以及教學人員的專業養成等方面的配合，在論文中我以本校為例，針對這三方面做一番仔細的探討。我們是在 1993 年開始著手技術的基礎建設，計畫於明年，也就是 2003 年完成，加強大學的通訊骨幹、佈建地方區域網路、架設郵件系

統將是不可或缺的。建設初期，我們便有兩萬七千個 Microsoft Exchange 帳戶，當時我們儼然成為南半球流通量最大的交換網站，之後，我們的網站規模仍持續擴大中，這些我在報告中都有討論到。

而所謂彈性式的傳達，正是大學和國家之間所達成的協議重點，透過提供各項資源、應用各項技術，大學將必須透過開創、準備、傳授課程，來豐富整個溝通的過程，使教學者和學習者擁有更好的教學效率和教學管理品質，這點對我們大學來說是相當重要的，而我們也一直致力於實現這個教學及學習的特殊願景。

我們從一開始就很清楚，如果我們不提供學生選擇及自我管理的機會，或者提供學生適當的工具及支持機制，讓他們有機會成功實現自我管理學習，我們就無法達成其他與學習或培養畢業生必備特質有關的目標，這樣的想法，在我們的構想中佔了相當重要的地位。

接下來，我要讓各位看看，本校教職員是如何運用此套系統的。新進教職員會得到一個現成的個人網頁，他們在網上擁有的所有資訊，都是來自南澳大學的四個資料庫系統，分別是：房間配置資料庫、電話資料庫、Microsoft Exchange 資料庫和人力資源資料庫，當有新成員加入，這樣的系統就會自動形成，我並不能改變線上既有的資訊，但是我可以新增各項我想要的資訊，自訂成我的個人網頁。

各位現在看到的是我網頁的下半部份，我在這裡擺上了我所有的著作及其他各種訊息，你可以看到最底部的地方有個更改按鈕，我只要一按下這個按鈕，就會跳出一系列視窗來替換我的網頁，而我需要做的就是空白矩形內，打入我想擺在網頁上的資訊，我可以將 Word 檔案內容，利用剪貼的方式放到這個空白矩形裡面，只要透過這樣的步驟，我的網頁就完成了，這就跟使用電子郵件一樣簡單，你只要知道怎麼移動滑鼠、選取和打字，你就可以管理自己的網站。

我告訴大家我們這種做法有兩個主要的理由，一個是我希望各位了解，利用我們所創造的工具來管理網站，是件相當容易的事，另一個原因是我希望各位知道，透過這樣的一個過程，我們能更有信心進入到網路這個領域。

此外，我們也提供教學人員許多其他的支援。你現在所看到的是學習整合的一個系統，這個網站同時提供學生和教學人員所需的資源，我們先來看看教學人員資源的部份，在這裡我們可以找到網路教學題材的許多相關連結，接下來第二欄上方是所謂的科目及課程評量，點一下這裡，我就可以看到各種資料的 Word 檔或 HTML 檔案全文，教學人員可以從這裡下載檔案，取得大量與大學評量政策相關的參考資料。

我們有學生評量指南，同時還有校內評量工具總覽，以及一般特質和考核本校畢業生績效的畢業生評等各項相關資料，這就是我們所擁有的，用來協助教學

人員及學生的資源。

在我們參與資訊傳播科技應用的過程當中，我們必須體認到一件事，那就是我可能面臨各式各樣的狀況，這些我都在報告中一一探討，例如如何評估教學及學習成效、課程傳遞及行政事務的交集等。如果管理計畫限制到學生在組織裡的運作，那麼即使有具備彈性的線上教學環境也是徒然，對高等教育的專業素養將是改變教學者與教學本身的最大力量，同時也是教學訓練權威的一切基礎。我們發現學生們現在所接觸到的資源，已經遠比以前豐富許多。

在澳洲有三間大學透過網路共享圖書館資源，它們分別是阿得雷德大學、福林德斯大學及南澳大學，換言之，我大學裡的學生在十年前學校剛成立時所接觸到的資訊，已經遠超過當時哈佛大學圖書館所擁有的資源，而現在網路上所有的資訊更是豐富。

我認為，網路為我們所帶來最主要的改變，就是要求我們得在管理中拔得頭籌。顯然管理為教學及學習所帶來各種新的改變，必須具有某些共通的特性，例如這些改變必須有某些規定在背後支撐，以供教學人員親身執行。然而，我相信經由透視管理所形成的大規模改變計畫，將比由規範團體所訂立出的計畫能帶來更多幫助，針對這點，我今天就不在此贅述，同樣地，在論文中我也有完整的論點，來說明為何我相信組織管理者所擁有的，足以帶來大規模改變的遠見，是來自於教學中資訊及通訊技術所帶來的影響，以及為什麼我們必須避免舊式的教學法，和現今的遠距教學或組織的線上傳達相比之後，所突顯出的毛病。

UniSAnet 是我們針對南澳大學中的教學及學習所創造的環境，在全球資訊網上，透過網頁呈現出來的是一所完整的大學，它介紹了教學人員、所有的課程及科目，並提供學生學習及行政管理上的所有資訊，它所涵蓋的層面包括了對外推廣及內部的行政管理與教育。我們很清楚如果和墨爾本或模納士(Monash)等大學做比較，我們會因為招牌沒有他們響亮，而無法輕易打入國際教育市場，但我們能做的是，把我們平日教學環境中所有的東西，呈現在他人面前，供人體驗、檢視，然後再參考他人的經驗，補足我們所缺乏的什麼，而不是一昧地用我們自己的招牌，把我們的課程推銷出去，而事實上，透過這樣的方式，我們已小有成績，和其他的澳洲大學相較之下，我們有更多的海外學生。

當我們塑造屬於我們自己的環境時，我們是依照下列這些東西來做決策。首先，技術層面發展要能一切從簡；第二，我們把焦點放在如何在既有的東西上，做加值的功夫，這部份對遠距教學的題材來說尤其重要；第三，我們希望透過網路的學習環境，能使現有的資源，更被容易被人所理解、使用並引起互動，教學人員和學習者應該要能夠透過一般的瀏覽器，而不需要用外掛程式等特殊軟體，就可以使用 UniSAnet，這樣的一個操作平台，應該要是整個大學內通用的標準操作介面，好方便所有人做後續的開發。事實上，我的部門正協助一些學者開發新

工具，但這當中有一個交換條件，那就是一旦他們的開發成果正式啟用，這些成果就必須納入整個標準作業環境中的一部份。

所謂的 UniSAnet 具備以下的特點，它是一個在全校通用的作業環境，你不可以利用其他的作業環境，私自開發課程教材，換言之，我們並不採納像 WebCT 或 Blackboard 一類的作業環境。當然，在早期我們也有少部份的開發人員，如電腦或資訊系的人員，利用 Lotus Notes 來處理一些東西，在這種情況之下，我們將會確認他們也能用 Unix 的環境製作教材，不過再怎麼說，這些所謂的例外仍是一般相當常見的教材開發標準介面。

再者，UniSAnet 所採用的是低成本且不要求什麼操作資格的技術，它是 Microsoft NT 為作業平台，所以它對教學人員或學生在資訊科技方面的應用程度，只有最基本的要求，我常說，至少我自己要會使用這樣的一個系統，而我認為，如果我會操作這樣的一個環境，其他人應該也就沒有什麼問題。UniSAnet 提供學生的是個相當一致的操作介面，它還連結了網路和資料庫，所有存有學生必要資訊的資料庫，只要透過學校網路，用一組密碼登錄，就可輕易進入，對於這樣的機制，我們運作地相當徹底，所謂的相容性是我們的本錢。

教學人員不需要具備特殊的資訊科技應用技巧，只需利用一些範本、系統精靈或網頁就可以輕易執行整個過程。現在你所看到的，是我們很早期的時候所開發的系統精靈，這個精靈雖然只有粗略的設計，不過卻已經具備了一些基本的架構設計。這個是 11 個步驟中的第三部份，它正要求教學人員組織教材，它提供了下面這段解釋：

學習指南包含了幾個單元，這些可以被稱為教材的章節、標題或主題，你希望建立幾個單元呢？

你可以在這裡輸入你想要的任何數字。

你想要把這部份命名為？

有些人會把它稱做一週工作內容、標題，或一個單元，只要點選這裡，然後陸續進入精靈裡的其他部分，我們提供了設計相當紮實的空白學習指南，而我們要求品質就是從這些小細節開始的。

UniSAnet 還能避免智慧財產權可能引起的相關問題，它是依照教學構想一步步設計的，能確保教學人員線上撰寫教材之後，不需要自行進行後續製作。不過在這裡我們就遠距教學遇到了一個問題，那就是我們堅持所有的教材都必須透過專業的編輯處理，這成了一個執行上的瓶頸，也就是說，為了達成這樣的一個目標，遠距教學教材出爐前的 6 個月，教學人員就應該要完成教材設計，並呈交給編輯，但事實上，這在執行上有很大困難。所以，我希望能有一套流程，是無需

繁瑣的技術應用，就能適用在所有的課程或學生身上。

這樣的流程可把風險降到最低，因這樣一來，教學人員只需要達到少量的要求即可，不過，如果教學人員本身希望開發新的教學內容，那麼上述的狀況將無法避免。事實上，某個教授醫學輻射的團體，便成功地透過線上學習，化解這樣的困境，他們在過程中確實承擔了風險，不過，他們的成果卻成為我們教學資源中的主流。事實上，這樣的運作機制在私底下獲得接納與許多支持，它肯定為提供品質學習所做的一切努力，而我們對教學人員所提出的要求重點，並不是在資訊科技技術的進步，而是教學及學習的內涵。

那麼，對大學本身來說，究竟從中得到什麼好處呢？我想，大學最主要的收穫應該是，使一批非電腦資訊專業人員從中獲得成功吧。它讓學校及教學團隊，把重心放在支持學習，而不是一味地著重操作新的技術，它讓我們大量地創造出適合許多個體的學習資源，但是，它只要低成本，就能讓我們在替代機制有限的情況之下，就大學的教學、行政管理和支援服務等方面進行線上傳達的試驗，而整個機制所建立的基礎，是如 Microsoft Exchange 一類廣為肯定的標準。

這樣的設計具有 3 個重要的特色：相容性，我們針對教學或學習所做的所有設計，都必須能與校內的其他資料連結；此外，它適用於所有的學生及課程；還有，它具備相當多的功能。這當中，相容性和適用性最為難能可貴，它比我們如何提供線上作業的工具還要重要，功能性的重要性則在於其次。

我們還額外建立了幾個功能。TellUS 是一個調查工具，可協助教學人員針對股東或學生進行調查，而這樣的一個過程將可透過網路運作。AssignIT 是學生線上交作業、紀錄和取回作業的系統，可確保學生將作業交到老師的手中，在過去的 7 年裡，我們用一台伺服器運作這樣的系統，且從來沒有任何學生作業遺失。Transcript2 則是提供給學生，可用來紀錄學生進步和成就的線上工具，這個工具則是依照我們認為畢業生應有的 7 個特質來制定的。Experiencebank 在澳洲則是首創先例，它連結了 Transcript2 與 TMP Worldwide 在全球的資訊，TMP Worldwide 是一個國際人力資源公司，它能讓我們學生接觸到全球各地需要人才的雇主。

我們另外有一套每年針對各課程使用的課程評量機制，學生可透過評量教學內容，在網路上評定他們的老師，而這將成為老師校內晉級的重要參考，教學人員必須累積獲得許多來自學生的肯定，才能夠獲得升格的機會。我們為學生開闢了一系列叫做 LookUP 的入口網站，學生在此可獲得所有大學內所儲存、有關他們的資訊，而學習整合則是之前我跟大家展示過的，線上教學人員及學生的支援網站。

我們針對所有教學人員的課程和科目設有網站，我們將所有的資源都儲存在叫做 Get Connected 的光碟當中，我們另外提供了軟體下載，讓不熟悉資訊傳播科

技環境的學生，也可以利用光碟，在網路上自由操作。

目前，我們已著手開發第二版的 UniSAnet，我們透過本大學旗下的一個營利事業單位 Knowledge South，正和阿得雷德大學及德州大學共同進行測試工作，這個新系統，全部為我們大學所有，我們打算第二個學期，將在校內介紹這個新系統。這個學期，我們已經透過 25 個課程測試這個新系統，我們相信新系統的工作能力，將可超過過去 3 年我們所做的一切，不過，這並不代表過去 3 年內我們所建立的一切，可以遭到忽略。這對我們來說，是一個相當具有影響力的教學資源，未來只要在時間及資源許可的狀況下，我們將採取進一步的開發工作。

我的演講到這裡差不多要接近尾聲了，最後我要再談談品質的重要性，因為校長要我順道提一下。我想說的是，我們大學透過 4 個標準，來管理線上教學品質，第一個方法是通用性，就是我們透過一個整體作業架構，來定期計畫或考核所有組織內的工作，通常是以 1 年為一個循環，所以 4 月 29 日的時候，我的部門及線上服務的工作人員，將要面臨管理高層團體的考核，此外，我們也可以對他們過去 1 年所做的種種事情提出質問，另外在各教學部門的助理，也要經歷這過程，他們同樣也可以與他們的直屬管理人員爭論。

其次，我要再次強調，我們透過培養專業的教學人員，來確保教學品質。我有一群教學人員小組，他們雖然已經不再從事教學工作，但是卻全職地協助培養其他專業教學人員，他們對我們的線上教學及學習，提供了相當的幫助。此外，我們還有一群線上諮詢人員，他們往往在辦公室內陪伴教學人員，於教材製造的過程中，提供必要的幫助。

還有，我們計畫透過我之前所展示過的，具有優良組織設計的範本及精靈，來組織網路化的那個過程。最後，我們每年會透過一個匿名的線上工具來進行課程評量，了解學生的回應，在所有的 40 個問題當中，有 10 個問題是和線上傳達相關，而這正是我們大學在評估這整個過程的最佳依據。

ONLINE LEARNING: OPPORTUNITIES AND CHALLENGES

Ted Chun-Chung Yang

The Overseas Chinese Institute of Technology
Taichung, Taiwan

ABSTRACT

Advances in information and communication technology (ICT) and new developments in learning science provide opportunities to create learner-centred, interactive, efficient, easily accessible, flexible, and distributed e-learning environments. E-learning can bring many benefits to higher education and support institutional strategic goals in access expansion, capacity constraint alleviation, new revenue generation, and institutional transformation. The educational opportunities that e-learning affords are exciting, but institutions face a variety of challenges. To emphasise the importance of joint efforts and communications at all levels involved, B. H. Khan (2001) identifies a framework with eight dimensions to provide guidance in the design, development, delivery, and evaluation of a meaningful e-learning environment.

1. The pedagogical dimension addresses issues concerning goals/objectives, content, design approach, organization, methods and strategies, and medium of teaching and learning.
2. The institutional dimension is concerned with issues of administrative affairs, academic affairs, and student services.
3. The technological dimension examines issues of infrastructure, planning, hardware, and software.
4. The interface design dimension encompasses page and site design, content design, navigation, and usability testing.
5. The evaluation for e-learning includes both assessment of learners and evaluation of the instruction and learning environment.
6. The management of e-learning refers to the maintenance of learning environment and distribution of information.
7. The resource support dimension examines the online support and resources.
8. The ethical considerations of e-learning relate to social and cultural diversity, bias, geographical diversity, learner diversity, information accessibility, etiquette, and legal issues.

While there are responses to each of these factors in this framework, not all answers are likely to be compatible within the traditional cultures, structures, and processes of our colleges and universities. How do higher education institutions develop a proactive direction that harmonizes with the existing culture and values? In addition to the fact that cultural and technical readiness for e-learning are not trivial issues, policy issues – and the resulting legislation – may be as difficult. Policies must come from all levels of government as well as from the institutions themselves.

Since the launching of the Distance Education Four-Year Development Plan in Taiwan in 1997, students and teachers in all levels of education have participated in various aspects of learning and teaching using ICT. E-learning developments in colleges and universities are rapid and impressive technically speaking. However, the challenges and problems for creating a truly e-learning community and culture still remain.

To better illustrate the recent trends and developments of e-learning in Taiwan's higher education, this presentation intends to outline two projects : the Open Source Code Education Software Research Project (<http://www.nsc.gov.tw/sci/news.html>) funded by the National Science Council and the Distance Education Evaluation Project (<http://dised.ntu.edu.tw>) funded by the Ministry of Education.

E-learning will undoubtedly be part of higher education's future. "Think big" and with careful planning, judicious choices, and resolute execution, that future will be a positive one for our institutions, as well as for those we serve.

ADMINISTRATION AND GOVERNANCE: QUALITY ASSURANCE

Dr David Woodhouse
Executive Director
Australian Universities Quality Agency
(AUQA)

ABSTRACT

This presentation outlines the Australian national QA arrangements for QA in higher education (HE), particularly as they relate to administration and governance, and then speculate on possible developments in the near future.

1. AUQA and A&G

The first of AUQA's four objectives is:

"to arrange and manage a system of periodic audits of QA arrangements relating to the activities of Australian universities, other self-accrediting institutions (SAIs) and state and territory HE accreditation bodies"

In auditing an institution, the AUQA audit panel interviews (inter alia) members of the Council and senior management, and also investigates the extent to which the actions and achievements of these bodies are monitored and evaluated internally, and whether the findings of such evaluations are acted on. An AUQA audit panel usually asks Council members about the institution, their perceptions of various aspects of the institution, their role in governing it, and how they assess their performance in that role.

2. Accrediting agencies and A&G

The state and territory accrediting agencies have various responsibilities in relation to quality in institutions of HE. In 2000, a set of five Protocols was approved by the nine ministers of education to provide greater consistency in treatment of non self-accrediting institutions (NSAIs) across the country. Each of the nine governments is enacting these into law. Thus, although the requirements will still vary between states, all will as a minimum adhere to the protocols.

The Protocols cover the following the recognition of universities, overseas HE institutions operating in Australia, accreditation of HE courses in NSAIs, joint activities of HE institutions and other organisations, and courses for overseas students

In investigating an NSAI to see whether to accredit a course (Protocol 3), an agency considers the institution's governance, financial and administrative structures. Accreditation of a course indicates that the agency has been satisfied on these matters.

3. What next?

As the level of external scrutiny of HE institutions has grown over the last ten years, councils for a while appeared to immune from the scrutiny: they were the bodies responsible for scrutinising the rest of the institution. More recently, however (and independently of AUQA), interest has been growing in the performance of university councils. In the USA, the Association of Governing Boards works actively to enhance the performance of 'trustees'. In Australia, it may be possible to develop some generic models for the governance and administration of our HE institutions, and identify and disseminate examples of good practice. AUQA may be able to assist with this. AUQA will be developing workshops and publications to assist in the improvement of quality in HE, and this could well include the training of council members, and the communication of good practice in governance and administration.



**TRANSCRIPT
OF PROCEEDINGS**

SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

FOCUS SESSION:

ADMINISTRATION AND GOVERNANCE - QUALITY ASSURANCE

SPEAKER:

DAVID WOODHOUSE

**ACADEMIC AUDIT UNIT, AUSTRALIAN UNIVERSITY QUALITY
AGENCY**

MR WOODHOUSE: When I was invited to speak at this conference, I was told that my topic for this session is "Administration and Government - Quality Assurance" and, being a literal-minded sort of person, I intend to talk about quality assurance as it relates to administration and governance from my perspective in AUQA.

What I want to do is outline very briefly Australia's arrangements for quality assurance in higher education, but I don't need to spend much time on that because Prof Denise Bradley covered that well in the earlier talk, so we can get through that very quickly and cover those three headings:

- AUQA, the Australian Universities Quality Agency, and its relation to administration and governance.
- Accrediting agencies and administration and governance.
- What next? Where are we going to as we develop the system here?

First of all, a disclaimer. I have only been in the position of executive director of AUQA since it started in July last year and, before that, I worked overseas for 10 years. Now, before that I had worked in Australia for many years within a university here, but I certainly am not in a position yet to give a current and up-to-date national overview. It's one of the traps of being in this sort of position that, as soon as you're head of a quality agency, people ring you up and say, "Oh, we're about to review our X system. Which university in this country is doing X very well?" It can be the library, the student services, the student admin, whatever. And you have to say, "Hang on, I'm new here. How would I know?" I in fact received a questionnaire yesterday from someone doing a major survey, saying, "What do you think the status is of academic education for teaching in this country?" and again I said, "Well, how would I know at this point?" I don't have a competent personal view, let alone an official AUQA view, and the two of course may be different.

The first topic: AUQA and administration and governance. I should say that I don't personally support today's tendency to distinguish very strongly between governance and administration or between governance and management. I quite see the different emphases, but I think that people get carried away and get hung up on demarcation disputes - "Is that the role of the council or is it the role of the academic board?" - and, rather than accepting there's always going to be a fuzzy area there - as Carl Jung said, it's easy to draw boxes but difficult to put people into them - I prefer to just talk about the emphases and not try and sort the boxes out.

The truth of Jung's statement of course is a distressing fact of life to those of us who try to be terribly organised and really like putting people into boxes. But, never mind, you just have to put up with it! We have to keep reminding ourselves that any structures in an organisation are for the service of people and not vice versa.

AUQA was set up, as Prof Bradley mentioned this morning, jointly by nine governments - the federal government, six state governments and the Territory government - operating together through a Council of Ministers of Education, and it was that Council of Ministers of Education that agreed to set up AUQA. That is actually a very nice position to be in. You might think it's a disaster, but the only time of the year it's going to become a disaster is when we have to arrange a meeting of those nine ministers in order to accept our financial report. They're sort of by way of being our shareholders. We are a company and they're like the shareholders, so we need a shareholders' meeting every year, and it really is difficult to get nine ministers to meet at any one time, even though (a) they can nominate proxies and (b) the proxies can meet by phone. Even so, it is not easy to get that intersection.

But aside from that very technical and very minor problem, it's much better being responsible to nine governments rather than to one, because if you're responsible to just one, they are likely to interfere, but if you are responsible to nine, none of them is in a position to individually interfere and getting the nine of them not merely together but to agree on interfering is probably impossible. Therefore, we're probably safe unless and until those nine ministers say, "We're sick of having AUQA altogether," and they simply disband us. But I think, on the way, there's not a problem.

That is good news to a lot of the institutions that we audit, because, again as Prof Bradley said, it really is rather pleasant that over the last two to three years there has been a coming together of the government view that there should be a quality agency and the institutional view that we probably have to put up with the notion of a quality agency, and both sides were developing these ideas in 1999 when I was working in New Zealand and both sides independently were making contact with me in New Zealand for a bit of advice on how they might develop it and what it might look like and so on.

What has eventually been implemented, although it was eventually agreed by the ministers, looks no different, except possibly in the composition of the board, to what would have been implemented if the AVCC had managed to carry the day and got the implementation. So it is quite pleasant that we have those two sides agreeing that there is a need for this entity and therefore we don't have to fight for our position all the time. Of course, as I fully admit, every institution would, as a first preference, want AUQA not to exist, but they have all accepted that it's a necessary evil for the moment and so we are embarking on trying to be a not too unpleasant evil.

Set up as a company, we have a constitution for the company and we have four objectives. I'm not going to go through them all. The first one sums up enough a basis for what I'm going to say today:

To arrange and manage a system of periodic audits of quality assurance arrangements -

in other words, we are to carry out quality audits -

relating to the activities of Australian universities and other self-accrediting institutions -

SAIs for short -

and state and territory higher education accrediting bodies.

A couple of things there. Note it just says "relating to the activities of Australian universities" - no restriction. We could interpret that as saying whatever an Australian university does, we are required to audit it. In practice we're going to aim to restrict ourselves to academic activities, but even then you could say, "Well, what is a university but an academic organisation? Therefore any activity is an academic activity," but we can talk a little bit more about how we're trying to restrict that very slightly later on if you wish. But the operative thing first to note is how inclusive that is.

Just so that you've got a bit of a background, we have 39 universities and, for our Taiwanese colleagues, there are 37 public and two private; a totally reverse balance to what you are accustomed to. There are four other institutions that do not have university status but have been given the right to introduce their own courses without external approval, and that's what we mean here by self-accrediting. I find that a very funny term, but what it means is that the institution itself is allowed to carry out whatever process it thinks is appropriate to introduce new courses, such processes as might be called accreditation if they were carried out by an external body.

Then each of the six states and two territories has an accreditation body which has the responsibility for accrediting all programs in, at the moment, another 100 or so higher education institutions - in other words, programs at the diploma, higher diploma, degree level. Those institutions are called non-self-accrediting. They can't introduce new programs without accreditation by one of these eight bodies, and our task is to audit those accrediting agencies. So that's actually quite a different task. Auditing an institution is a different task to auditing an agency even though the processes are very much the same. Again, we audit the entity against its own objectives and see how well it's achieving those objectives. What that means though is that, either directly or at one step removed, AUQA has some responsibility for quality in the whole higher education sector in Australia.

Back to that all-inclusive "quality arrangements relating to the activities of Australian universities". I will talk mainly in this first section about universities. It's clear that the governance and the administration of an institution come within that category, that specification. The council or board, the governance, is responsible for setting the policies that establish the whole emphasis, tone and priorities of the institution and for approving its objectives. The administration, the senior management, is responsible for advising the council in these matters and then for planning and implementing procedures that achieve those objectives and are in keeping with that spirit as set by the

council.

So if we are going to do a comprehensive audit of an institution, we are going to make sure that we interview members of the council, members of senior management, and investigate the extent to which the actions and achievements of these bodies are monitored and evaluated internally and whether the actions of such evaluations are acted upon.

In interviewing council members, an AUQA audit panel would normally ask the council members about the institution, their perceptions of various aspects of the institution, their role in governing it and how they assess their performance in that role. I was appointed in 1994 to set up an analogous agency in New Zealand and when we started interviewing institutions, there was a bit of a question: "Well, of course, you won't be looking at the council, will you? They're the ones that are in charge of this place and you're auditing this place that they're in charge of." We said, "Well, yes, of course we will be talking to the council," and they said, "Well, that's all right. We'll come and tell you what our institution is like" - you know, they're going to come and instruct us. But then when the audit panel started saying, "Well, how do you know you're doing a good job as council members?" it came as a little bit of a shock to the system that they were part of the thing being audited.

Just as we might talk to the chair of the research committee about how the research structures go on in the institution but would also be auditing the research committee, so we're talking to council about how it runs the institution but also about how well it's doing that. So we see it very much as part of the auditee, and that's what we're doing here.

The output of the audit process is a public report that identifies and commends good practice and identifies and recommends attention to areas where improvement is needed. People say, "Well, who's report is that?" and the answer is it's AUQA's report. To whom do we send it at the institution? There was some discussion and debate. You can probably guess the debate: does it go to the chancellor as the titular head of the university and chair of council or does it go to the vice-chancellor as the chief executive officer? I'm a great one for sitting on the fence. We're sending it to the chancellor, a copy to the vice-chancellor. In addition, it will be on the AUQA web site. So when we talk about a public report, we mean a public report. I therefore don't see a problem in sending it to both the chancellor and the vice-chancellor.

The second part of what we do is to audit the accrediting agencies, and some concern was arising that eight different accrediting agencies were making different judgments about higher education institutions within their jurisdiction and so there's plenty of scope for agency shopping. "I will first of all write to the agencies in South Australia, Victoria and Queensland and ask them about the hoops I will have to jump through in order to set up an institution. Oh, yes, the Queensland one is dead simple but South Australia and Victoria have got pretty tough restrictions. We'll go and set it up in Brisbane and get accredited by the Queensland one and then move out from there to the extent that we

can."

The possible diversity and different standards being applied by the different agencies was becoming something of a problem, and so in 2000 a set of five protocols was approved by the same nine ministers of education, the same group, to provide greater consistency in treatment of the non-self-accrediting institutions across the country. Denise made quick reference to those protocols. I'll put up a slide just giving you the scope in a moment.

What's happening now is that each of the nine governments - the Commonwealth and the eight states and territories - are enacting those into law. There will still be some difference between states. That's what comes from being in a federation. I've lived in Australia long enough to be very pleased at the way in which the state-federal infighting slows things down if the proposal is something I don't want and very annoyed about the way it slows it down if the proposal is something I do want. I want to have my cake and eat it, just like everyone does. So there will be varied requirements between the states. After all, you're going to be different if you're in the tropics than if you're in the temperate zones and so on. But all will, as a minimum, adhere to the protocols. The protocols cover five points.

(1) Recognition of universities.

If I, here in Adelaide, want to set up another university - we don't have enough with the three that are here now, or even the South Asia University or whatever that funny one is that hangs around here, or the Seven Stars University which I've also heard of which I think is around here. I'm not entirely sure how they got around things and are able to use the "university" name, but they're not serious. But suppose I want to set up a serious university. Then I'm going to have to apply to the South Australian Department of Education and be run through its accreditation section and they will apply protocol 1, which has certain requirement about what one needs to be a university. I can wave a copy of the little protocols booklet at you in a moment and it's up on the DEST web site.

(2) Overseas higher education institutions operating in Australia.

In my view, the core one is:

(3) Accreditation of the higher education courses that these institutions introduce.

(4) Joint activities of higher education institutions and other organisations.

Those other organisations can be universities operating interstate, so if you had Melbourne University over in the state of Victoria wanting to do some joint work here with an institution in Adelaide, that would come under the responsibility of that accreditation body of South Australia.

(5) Courses for overseas students.

All courses for overseas students, whether in these non-self-accrediting institutions or in the universities, must be approved by the accrediting body. It's an attempt by the Australian governments to make really sure that overseas students are being treated well, because there have been one or two cases of English language colleges falling apart and students losing deposits or having spent money and not seeing the return for it that they had hoped, and so the government is really trying hard to cover international students wherever they are.

I won't go into detail. There's much more in the paper about what the protocols cover and, as I say, you can easily get a copy of that yourself. In investigating an institution to see whether to accredit a course, an agency considers the governance, finance and administrative structures, among other things. The agency covers those things in its accreditation, so that's talking to you about quality assurance, administration and governance in those institutions, and we audit those agencies.

Finally, as the level of external scrutiny of higher education institutions has grown over the last 10 years, councils for a while appeared to be immune from the scrutiny, which is the situation that I just mentioned to you that I encountered in New Zealand. The councils were really expecting to be scrutinising the rest of the institution and then tell us, the external agency, about things.

More recently, however, and independent of AUQA, interest has been growing in the performance of university councils and last year, on the initiative of some councils and chancellors, the first Australian national council conference on university governance was held at Macquarie University. That may well become an annual or biannual event and will probably result in more consistent attention being paid throughout the system to university governance and therefore AUQA's coverage of this topic within its audits will reinforce that.

In this respect, Australia is not particularly leading. In USA there has been an Association of Governing Boards in place for many years, which works actively to enhance the performance of governing board members, who mostly are called trustees in the American system. It may be possible in Australia for us to develop some generic models for governance and administration of higher education institutions and identify and disseminate examples of good practice.

AUQA may be able to assist with that because it is our intention to identify, as we audit institutions, what we consider to be instances of good practice and to make those available through a good practice database on our web site. We shall, furthermore, be giving workshops and producing publications to assist in the improvement of quality in higher education, and one obvious service we could offer, should institutions wish us to, would be training of council members in the duties of a council member and, more generally, the

communication of good practice in governance and administration, just as in other areas of university activity.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月9日（星期二）

專題討論

行政與管理—品質監控

演講者

澳洲大學品管機構
學術監督組

DAVID WOODHOUSE 博士

當我受邀在這場次發表演講時，我被告知這場討論會的主題是「行政與管理－品質監控」，以我這凡事講求務實的個性，今天就讓我透過自己在「澳洲大學品管機構」服務的觀點，來跟各位談談與行政及管理息息相關的品質監控。

我打算簡短概略地跟各位說明，澳洲究竟是如何實施高等教育的品質監控，因為 Denise Bradley 教授剛才的演講中已經有談過這個部分，所以我不再重述。現在我們就來快速瀏覽這部分的三大主題：

- AUQA，也就是我們所說的「澳洲大學品管機構」，它與行政及管理之間的關係。
- 認證機構與行政及管理。
- 下一步該怎麼走？當我們發展出此一監管系統，未來該往何處去？

首先，我必須聲明我是從去年的七月才開始擔任「澳洲大學品管機構」的執行董事。之前的十年，我一直待在海外工作。雖然出國之前我曾在澳洲的大學工作過，也累積了多年的經驗，但是我絕不敢自稱是談論這個主題的最佳人選，能夠帶領大家了解全國最新情況，這正是今天我這個角色弔詭的地方。一旦你變成了這個領域的品質監控單位主管，就會有人找上門來問你：「我們計劃重新檢討我們的甲系統，想請教一下，甲系統在我國哪個大學單位內的運作情況最好？」這問題的答案有可能是圖書館、學生服務單位、學生行政單位，或其他任何答案，這時候我只好回答說：「等等，我才剛來這裡不久，我怎麼會知道答案？」老實說，昨天我才收到一份來自研究人士的問卷，上面問我：「請問您認為本國學術教育的教學現況為何？」我得再次承認說：「我怎麼知道？」我並沒有一套令人滿意的個人看法，所以今天就請各位暫時拋開即將聽到來自澳洲大學品管機構高層看法的這個想法，這將可以帶給各位不太一樣的思考過程。

第一個主題是：澳洲大學品管機構與行政及管理的關係。我想說的是，我個人並不支持現今非常強烈地區分管理和行政，或管理和經營之間不同點的趨勢。我可以看出各有不同的堅持，但我認為在面對這些劃分的爭議時，比如說：「究竟這是大學董事會或是學術委員會所該扮演的角色？」人們總是不願接受問題總有模糊地帶的事實，而往往變得太情緒化，或陷入兩難，難以脫困。誠如心理學家 Carl Jung 所說，要畫出框框其實並不困難，但要把人們放進框框裡面就困難重重。因此，我寧可只談大夥所強調的重點，而不去試圖將那些框框分門別類。

對那些試圖將生活變得井然有序，真正喜歡將人擺進框框中的人而言，Jung

的話語無法辯駁，這毋寧是生命中令人感到沮喪的事實。但是也不用煩惱，只要忍受就是了。我們必須經常提醒自己，一個組織當中的任何結構都是要人們服務，而不是反過來。

就像今天早上 Bradley 教授所講的，「澳洲大學品管機構」是由澳洲九個政府單位聯合成立，其中包括聯邦政府、六個州政府以及兩個特區政府，透過「澳洲教育部（廳）長聯席理事會」來運作。。可能有人會以為澳洲大學品管機構由九個政府聯合成立，會遭遇宛如多頭馬車的困難，其實情況還好，唯一較困難的，是每年要邀集九位部（廳）長同時來參加會議。因為這些部（廳）長是我們的股東，澳洲大學品管機構就像是家公司，每年必須定期召開股東大會，提交財務報告；即便可以由部（廳）長指定代理人，或透過電話會議投票，但要一次召集全員到齊還真不容易。

但撇開這技術上的小問題不談，對九個政府單位負責，好過於向單一政府報備，因為如果只對單一政府負責，此單一政府便有獨權干預，但如果是同時對九個政府單位負責，其中任一個政府都沒有單獨干預的權力，而且要結合九個部（廳）長共同進行干預也不太可能。所以照理來說，澳洲大學品管機構是相當穩健的，除非哪天九個部（廳）長突然說：「我們受夠澳洲大學品管機構了！」然後就那樣把我們給解散了。但是我認為，那樣的情況不會發生。

對很多學術機構來說，我們的審查工作對他們來說是個好消息，因為就像 Bradley 教授講的，我們相當樂見在過去兩三年裡，政府的想法和學術機構的想法開始有了交集，認為品質監控單位有其存在的必要，且各界必須對此建立起共同的認知。實際上，1999 年政府單位和學術機構便開始有這樣的想法，那時我人在紐西蘭工作，而政府單位和學術機構雙方都曾分別和我聯絡，希望我建議他們如何發展這樣的一套構想，以及這樣的構想將會發展成什麼狀況等等。

雖然這個構想經過一段時間才獲得九位部（廳）長首肯，構想付諸實行之後的情況，除了董事會成員組成的這一部份以外，大多和澳洲大學校長委員會先前推動的計畫相同。所以，能夠獲得政府及學術機構雙方的肯定，對成立澳洲大學品管機構達成共識，也省去我們要為自己的定位爭論。當然，我承認學術機構若依本身利益為前提，不會希望澳洲大學品管機構成立，但現在大家已能接受目前澳洲大學品管機構有存在的必要，我們也儘量不惹人厭。

以公司法人名義成立的「澳洲大學品管機構」，有公司章程和四項目標。這部分我將簡單帶過，第一個目標涵括今天我要講的基本內容：

安排及管理品質監控的定期審查系統。

也就是說，我們將審查：

澳洲大學、獨立認證學術機構，以及州立或地區性高等教育認證機關相關的品質。

在這裡有幾點應該要注意的，請留意我所指的是審查和澳洲大學有關的活動，而不是指去限制澳洲大學的活動，也可以說，澳洲大學辦的各項活動，都是我們必須審核範圍。而在實際運作的過程當中，我們針對的是學術活動這部分，但即使這麼解釋，各位也可能會有這樣的疑問：所謂的大學而非學術團體到底要如何界定，才能確保所有的活動都是學術活動？關於這點，如果各位有興趣的話，我們稍後可以再針對這部分多作討論，談談我們如何定出執行工作的重點，不過各位對於我們執行的工作範圍只要先了解大概的內容即可。

各位了解這些基本資訊後，接下來我們來談談澳洲的三十九所大學，其中三十七位所是公立大學，另外兩所則是私立大學，這種公私立的比例與台灣的情況有所不同。另外還有四個機構，雖不具大學身份，但可自我評鑑，自行推動課程而無需外界認可，而這就是我們剛剛所講的獨立認證。我發現，獨立認證這個說法相當有趣，它的意思是說學術機構本身可自擬一套合適的程序，開班授徒，推出新課程，這些程序若是由校外機構來審核，就是認證。

此外，六個州和兩個特區另外有認證機關，來負責監督目前另外一百多個高等教育機構的課程，也就是負責頒發課程的執照或類似的學位資格，而這些教育機構就被稱為非獨立認證的學術機構。這些教育機構不能在沒有取得認證機關審查認證之前，就自行推出新課程，而澳洲大學品管機構所扮演的角色，則是監督這些認證機關，所以，我們的工作是不太一樣的，審核學術機構和審核認證機關的程序雖然差不多，但實際上對象是不同的。我要強調的是，我們主要是審查各個團體是否確實遵照他們的目標，及課程的落實程度。不論這些教育機構，是透過直接或間接的方式，澳洲大學品管機構都有責任掌控確保澳洲高等教育的品質。

現在，我們再回到「與澳洲大學活動相關的品質監控」，我先談談有關大學的這部分。我們都知道學術機構有各自的規定，來約束所有管理和行政方面的工作，這些規定可能是來自校務會或董事會，負責管理的單位必須制定出各個學術機構的政策，點出各機構的重點工作等等，以確保各機構能確實朝實現目標邁進。而較高層的行政單位，亦即所謂的經營高層主管，則是負責向董事會提出建議，以計劃、執行各項程序，來落實目標，這樣的做法和董事會本身的精神是相呼應的。

所以要展開全面性的學術機構審核時，我們會先拜訪董事會委員，也就是經營高層，並調查這些單位的監督評估範圍、方式和成效為何，以及這些評估工作是否確實執行。

在訪問董事會委員的時候，澳洲大學品管機構的審核小組通常會詢問他們有關該學術機構本身、組織的各種願景，還有董事會要如何扮演好管理的角色。1994年的時候，我被指派到紐西蘭，成立了一個類似這樣的審查單位，當我們開始訪問那些學術機構的時候，他們對我們提出了一些質疑：「我想你們應該不會對我們的董事會展開審查吧？因為基本上，董事會就是負責審查，而你們正在做他們所做的工作。」我們於是回答說：「當然我們要知道董事會做些什麼。」他們又說了：「喔，是這樣啊，那到時候我們會告訴你們本校的狀況。」原先他們以為只要告知或指導我們怎麼做就可以，所以當審查小組開始提出像「您要如何確知自己扮演好董事會成員的角色」時，他們感到有點驚訝，因為連董事會本身也屬於接受審查的一部份。

就像和研究委員會的主席談到該研究單位如何在學術機構下運作，以及研究委員會如何接受考核。在和董事會委員，談起如何經營整個學術機構和他們的經營成效時，我們將這些委員一視同仁地納入整體審核的工作。

審核結束後會有一份公開的報告，報告中除了肯定優良的執行工作，也會提醒需要改進的地方。有人會問：「這份報告是誰做的啊？」答案是澳洲大學品管機構的報告，而這樣的一份報告該交到哪個單位呢？對於這個問題的答案，依然有些爭議。各位可能會猜，這份報告是呈交到大學名義上的負責人董事會主席或是實際上的執行領導人校長呢？為了兼顧到各個層面，我們會將報告送到董事會主席那兒，然後再另外送一份副本給校長，此外，我們也把報告公開在澳洲大學品管機構的網站上，所以這樣一份報告，是公開給所有人知道的，所以不管是將報告交給董事會主席或校長，都不成問題。

下一階段，我們會針對認證機關進行審核，這個階段，爭議大多來自於八個不同的認證機關，會在各自的管轄區域內，針對高等教育學術機構做出不同的裁定，所以這部份所包含的層面很廣。「我先寫信到南澳、維多利亞和昆士蘭等地的認證機關，詢問成立學術機構須注意的各個事項，結果在昆士蘭很簡單的事，到了南澳和維多利亞卻有相當多的限制，所以我們打算把機構成立在布里斯本，在昆士蘭取得認證，接著再擴大到其他州去。」

不同的認證機關採用各式各樣不同的標準，而這確實造成了一些問題。2000

年，由九個教育部（廳）長所組成的聯席理事會通過了五項協議，以提供非獨立認證的學術機構較具一致性的運作方法。Denise Bradley 教授稍早已經快速提過那些協議，我現在將透過幻燈片，來跟各位說明整個狀況。

現在那九個政府，也就是聯邦政府和八個州及特區政府，把我剛剛談到的都實際制定為法律，當然在聯邦政府存在的體制下，各州之間還是會有些不一樣。我已經在澳洲住了很久，對於因為州和聯邦政府不合，而影響到某些事情執行的狀況，已經感到司空見慣，但是面對這種事情遭到延宕的情況，我還是會感到相當苦惱，我就像每個人一樣希望能各取所需，就因為這樣，各個州有不同的要求，畢竟身處在熱帶，和身處在溫帶等其他地區所需要的的東西是不一樣的，但是至少最基本的，這些東西都會納入協議之中，這些協議包括下列五點：

(1) 大學的認可

假設阿得雷德目前有三所大學還不夠，甚至我們把「南亞大學」〈South Asia University〉，或者是「七星大學」〈Seven Stars University〉也算在內還是不夠，（我不確定這兩所是如何經過一些審查而可以使用「大學」的名號，但它們並不是玩真的），假設我想在阿得雷德成立一所像樣的大學，我必須先向南澳州教育廳提出申請，由該廳的認可科所負責處理，他們將會採用必須共同遵守的議定書之條款一，因為這項條款列出了成立大學的必要條件，我可以馬上讓大家看看這本議定書的小冊子，或者各位可以到聯邦教育部的網站查詢。

(2) 海外高等教育機構在澳洲的運作情況。

我認為這當中最核心的部分是：

(3) 這些學術機構推動的高等教育課程認證。

(4) 高等教育機構及其他學術團體的聯合活動。

其他學術團體可以是跨州營運的大學，所以如果是在維多利亞州的墨爾本大學，要想和阿得雷德的某一機構合作，那麼就是屬於南澳認證機關的職權範圍。

(5) 可供國際學生修讀的課程

不管是在非獨立認證的私立學校或有自行認可權的大學之內，所有為國際學生設計的學（課程），都必須經認證機關審核通過。澳州政府期望能夠確保國際學

生受到良好的待遇，因為曾經有一兩次發生過英語語言學校經營失敗，導致學生無法拿回所付的保證金，或者付了錢卻沒收到當初預期的效果，所以政府竭盡所能希望能夠照顧到來自各地的國際學生。

這一部份我不再多述，協定書的內容在書面報告中都有，或者網站上也有。在調查組織學術機構，判斷他們的課程是否經過認證時，認證機關所考量的是管理、財務和行政架構等等，認證機關進行審核時會包括這些項目，這就是我一直在強調的品質監控，以及學術機構中的行政和管理，而澳洲大學品管機構則是負責審核這些認證機關。

過去十年來，澳洲高等教育學府受外來監督的程度慢慢增加，使得董事會似乎也對監督產生「免疫」的狀況，這種情形就像我剛剛提過在紐西蘭遇到的狀況一樣，董事會成為監督所有學術機構的最終單位，然後僅對我們這個外來的品質監控單位報告而已。

不過，隨著澳洲大學品管機構的獨立運作，各界對董事會的表現也愈來愈重視，去年在一些董事會主席的發起之下，澳洲首次針對「大學管理」之議題在馬奎理大學舉辦了全國性的大學董事會會議，這樣的會議往後會成為每年或每兩年一次的活動，同時將進一步引起各界對大學管理系統投以更多的關注，澳洲大學品管機構在未來的工作當中，也會加強這一部份的宣導工作。

有關推動學術品質監控這方面的工作，澳洲並不是扮演著先趨的角色，在美國早就有所謂的校務管理董事會協會，並且行之多年，該協會主動加強董事會成員的表現，也就是一般美國人所說的校董的表現。在澳洲我們可能針對高等教育機構的管理和行政工作，發展出一套通用的運作模式，以突顯及宣導優良典範。

澳洲大學品管機構將持續這樣的工作，因為我們本來就是在從事去蕪存菁的工作，在審核學術機構的過程當中，優良案例都會被放進我們網站的優良案例資料庫裡。我們還會舉辦研討會、發行刊物，以繼續推動改善高等教育的品質。此外，還有一項服務是我們所能做的，那就是訓練董事會成員如何做好本身的職責，以及推動大學各活動中行政與管理間的良好互動，這也是學術機構對我們的期望。

THE HIGHER TECHNOLOGICAL EDUCATION IN TAIWAN,
R.O.C.
QUALITY MANAGEMENT AND ITS COPING STRATEGY

Wen-shion Chang

Founding President, Professor Emeritus, NYUST
Chair professor of CKIT

ABSTRACT

For the past five decades, the Taiwan economy has achieved such remarkable progress that an economic miracle was created and resilience built to withstand economic turmoil. The island emerged unscathed during the Asian financial crisis of the mid-1990s and is currently coping with the global recession. Its power to sustain may be attributed not only to efforts of the government and the business sector but also to the high premium placed on education, particularly at the tertiary level. The long tradition of education has produced a vast pool of talents that act as a stabilizing factor in economic and social development.

The population of Taiwan has nearly tripled within half a century. During the same period, the number of schools and students rose fivefold, and teachers ninefold. Enrolment in vocational institutes increased about 300 times, which translates into the figure of 20 students per thousand of the population and that in universities 60 times, 25 per thousand of the population. Master's degree holders now number about 190,000 and doctoral degree graduates about 15,000. There are currently some 150 institutions of higher learning with a total enrolment of more than one million. Among these are 12 technological universities, 55 institutes of technology and 19 junior colleges providing for about 550,000 students. Graduates of these institutions serve at various sectors and contribute immensely to the economy.

Today, higher education is confronted with new challenges. Given changes in the population structure due to declining birth rates, the establishment of new schools, and a steady flow of students heading for overseas studies, some schools are known to be contending with admission vacancies. Meanwhile, social and technological progress demands that manpower be upgraded not merely in numbers, but more so in quality and skills. Therefore, higher education has to address a very important issue: the training of talents, with particular regard to enhancing the quality of students and instruction.

The emphasis on teaching quality in higher education and its enhancement is evident in the following initiatives. ...

- Focus on Pragmatic Learning
- Develop Career Potential
- Stress Project-Oriented Tasks
- Solidify Skill Certification System
- Set out to meet the Social Demand
- Recruit Teachers Who have Work-Related Experiences
- Emphasize Collaborative Educational Experiences
- Promote Continuing Education

The university has the prime mission and responsibility to enhance the quality of students and instruction. International exchange and cooperation provide a means by which schools face new challenges together through mutual assistance and encouragement. On the basis of sharing experiences and mutual benefits, schools may jointly strive for growth and progress to nurture for the nation and the world the best of human talents.

HOW TO PROMOTE EXCHANGE BETWEEN AUSTRALIA AND TAIWAN

Professor John Rickard
Southern Cross University

ABSTRACT

A recent survey by the AV-CC lists Australian universities as having 3895 agreements with overseas institutions in 2001. Of these only 74 were with Taiwanese institutions (less than 2%) and a number of these were inactive. Links with Taiwan ranked well below most of its Asian counterparts including such countries as Korea (150+), Japan, (300+) and Mainland China (400+).

Taiwan is under-represented and there is clearly a need to increase academic links between institutions in our two countries. The following are some suggested strategies for doing this:

1. Raise the profile of Australian Education in Taiwan
2. Provide profile information on areas of expertise/interest at institutions
3. Facilitate visits/provide support to academic staff to encourage interaction at a Faculty level
4. Provide on-going support for student and staff exchange

Raise the profile of Australian Education in Taiwan

Taiwan has very strong links with the US including in education. However there are signs that Australia is gaining a higher profile with recent Australian Education International compiled statistics showing a strong increase in Taiwanese students choosing Australia as a study destination while interest in the US and other countries has decreased.

It is an opportune time therefore to look at ways of expanding the educational relationship between our two countries. An initial important step will be to raise the profile of Australian education in Taiwan with a particular focus on quality aspects. An example would be the current AEI/DEST initiative to publish a book on Australian Science and Technology initiatives in Indonesia. A similar initiative in Taiwan would be valuable.

Provide profile information on areas of expertise/interest at institutions and Facilitate visits/provide support to academic staff to encourage interaction at a Faculty level

It is important that a culture of internationalization be developed at an Executive level within institutions and that there be a commitment to building links between our two countries at this level. Participation in such workshops as this is an important first step in building relationships. However, while a commitment at this level is important, a successful program of collaboration and exchange requires academic faculty commitment and academic champions. There is evidence to show that the top down approach will not work unless there is an equal commitment at Faculty level and historically most successful links between Australian and overseas institutions have developed from academic and research collaboration between faculty staff. It is therefore critical to provide opportunities for faculty staff to build links.

To facilitate this and to provide institutional information it may initially be necessary to develop profiles of Australian and Taiwanese institutions outlining areas where collaboration is sought or where there exists areas of particular research expertise. This will help institutions target areas where links are likely to be mutually beneficial.

Once such areas are identified it will be important to fund individuals or groups of academics with specific interests to visit institutions or participate in familiarisation tours. This would facilitate and encourage contact between staff where there is mutual interest and compatibility. The UMAP scheme has been useful in financing initial contacts and could be used as a vehicle but further targeted support from universities may be necessary.

Provide on-going support for student and staff exchange

Once these academic linkages are built, student and staff exchange opportunities can be developed. Australia has a significant imbalance in student exchange programs with more students being prepared to study here than there are Australian students willing/able to study overseas. The reasons are varied by research indicates that for the development of on-going student exchanges, cost is a major barrier to Australian students participating in such exchanges. While UMAP will fund initial exchanges there will be a need for on-going support by universities through scholarship programs.



SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

**TRANSCRIPT
OF PROCEEDINGS**

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

KEYNOTE ADDRESS:

**HOW TO PROMOTE ACADEMIC EXCHANGES AND
COOPERATION BETWEEN AUSTRALIA AND TAIWAN**

SPEAKER:

PROF JOHN RICKARD

VICE-CHANCELLOR

SOUTHERN CROSS UNIVERSITY

PROF RICKARD: This is a very difficult and interesting topic to address, in many ways, because if one is talking about how to promote relationships between two countries, in the case of Australia it would be very easy for me to drift into talking about how the Australian universities might increase their penetration of Taiwan in terms of attracting students. I think that that inevitably is coupled to what I might talk about and what we might talk about in this particular session, but it's not really what I want to focus on. I want to really address the issue of how we might promote better relationships between Australian institutions and those in Taiwan.

But first of all let me pick up a pet comment of mine. I think it is relevant to the discussion this morning when Denise was talking, but it's emerged in one or two of the sessions: the notion that in Taiwan the universities are predominantly private whereas in fact here in Australia it's the reverse. But let me say I think there's a great distortion there that, over time, is becoming more and more so. It's the fact that our public universities in Australia, most of them - indeed, if you really do your analysis, almost all of them - are indeed more private than they are public.

That really is a reflection of the fact that, with the declining government funding, the universities are going out and being more entrepreneurial and seeking additional ways to raise revenue, which, as an aside, in most ways I think has been beneficial. But the fact of the matter is that many of our public universities derive more than half of their funding from non-public sources, so we probably have much more in common than you might think.

Of course, at the end of the day the dilemma there is that, although we are public institutions and subject to all of the scrutiny and statutory requirements and so on that go with that - and of course, as my colleagues have pointed out previously, we are funded federally but subject to state or territory acts of parliament - in fact much of our behaviour these days is more consistent with a private university when you look at the sources of our funding. Indeed, if you take out of the university funding in Australia the Higher Education Contribution, the subsidy that students themselves pay - now, I think most of my vice-chancellorial colleagues share my view that that really is more like a student fee or, in fact, taxation rather than money that we get from government, but of course the government proclaims always that indeed it's money from government because the route that the money takes is to go from the student to government and then to the universities - but if you take that out, what's left is pretty woeful. I'm trying to stress the fact that our behaviour is, in many many ways, therefore, more like private institutions than used to be the case perhaps 10 or 20 years ago when we received most of our money out of the public purse.

Going to the topic here, let me give you a little bit of data, and perhaps two sorts of data. First of all let's look at the number of existing agreements between Australian universities and Taiwanese universities and put that in perspective with the number of agreements that exist between Australian universities and universities around the world. An AVCC list was compiled

last year, and this would most certainly be an understatement because there would undoubtedly be a number of agreements that were not revealed, and indeed I am sure there are a number of existing relationships that most of the vice-chancellors are not aware of themselves. Certainly, if my university is anything to go by, there are some relationships that certain of my staff like to keep all to themselves and I am probably the last person that they would wish to let know about it.

But the formal, official statistics suggest that Australian universities have 3,895 agreements with overseas institutions, so close to 4,000 in 2001. That includes, incidentally, a number that would be dormant, so I'm not suggesting that they are all active, but something close to 4,000 agreements worldwide. With Taiwanese institutions there were 74, so a little bit less than 2 per cent of the total. If you contrast that with the number of agreements that Australian institutions have, for example, in Korea, it exceeds 150; with Japan it's something more than 300; and with mainland China it's more than 400.

One might immediately reach the conclusion that we need to do a great deal more in the case of Taiwan, but of course, as everyone will appreciate, if you correct those numbers for population size or number of universities in country, I would suggest to you that on a purely number-of-agreements basis we might have a reasonably healthy situation right now. I do think it's very lumpy, and indeed the figures - I won't go into them now - suggest that some institutions in Australia and in Taiwan have been very active in forming relationships. Others in fact have not. So there's a great deal more that could be done there.

There are other statistics that people may find of interest. This is really the divergence from the topic that I referred to earlier, but look at the number of students coming from Taiwan to Australia and compare that with one or two other countries. Let me give you some numbers. From Taiwan, the total number of students studying in Australia in all sectors of education - that would include school, a whole range of arenas - is just over 6,000. 6,104 was the official number last year; in universities, 2,440, about 40 per cent of the total.

The corresponding figures for some other countries: Japan, just over 10,000 in total, 1,700 in universities - a higher number but a much lower proportion in universities; Indonesia, about 18,000, in universities just over 9,000 - about half; in mainland China about 15,000 in total, 3,700 in universities. So take Indonesia and China: if you corrected on the basis of population, you would have to say the number of students coming at this point in time from Taiwan to Australia is actually very significant. But it is interesting to note - and as I say, it's not so much the topic for now - that the proportion coming to study in higher education institutions in Australia varies quite a lot.

That's just a little bit of background information. The topic today in this session is what might be done to build, to further, relationships between universities in Australia and in Taiwan. My own view is that the challenge there - if you go back to the management or perhaps the marketing literature as

well - is about building relationships, is about relationship marketing in many, many ways. In management terms, people will tell you about converting the client or the customer into the supporter and the advocate.

I think the challenge is much like that with us. When we have meetings like this, we meet people, we form an initial relationship. I think if we are always serious about these sorts of issues, we need to convert some of those relationships into more deep and meaningful ones, and we need to make sure we develop more champions, more people in our institutions that really do have a passion to further those relationships. So that to me is what the challenge is about and, of course, the question is: how might we go about doing that?

For the purpose now of maybe opening some dialogue, I would just like to throw at you a fairly random list of suggestions of things that might be done. They're in no particular order, but if I look at Indonesia, recently Australia Education International and DEST, the Department of Education, Science and Training - there was a publication there, and I'm not sure of the title, very clearly looking at initiatives in science and technology that were occurring in Indonesia, and that publication it seems to me has done a great deal to promote Australian higher education.

I think one thing that we could do - and I would suggest it's two-way - is very much look at what's happening in areas like science and technology where our institutions are working together, and put that material together in a book. I think we might find various sources of sponsorship, including our own government, and possibly that might be the case in Taiwan. But I think it's important there to tell the story about what we are doing here and what's being done in Taiwan and where there are overlaps.

I must say, I think that there are some very interesting relationships now. I am sure there are more to be exploited. Today's meeting made me think about one area at my own institution, and that's in the area of complementary medicine. At Southern Cross we happen to have the only university based degree program in naturopathy. Of course, that's a fairly natural and logical arena in which to think about institutions in Taiwan, in mainland China and indeed in places like Hong Kong and so on; that we might work with Chinese institutions and share our expertise. If I might say, being very humble about that, it's also a very interesting case where quite clearly we have got more to learn in some areas than we probably have to offer, but the exchange in fact I think is a very interesting one.

So I think there are opportunities to look at some niche areas where we can work together. Of course, going one step beyond that, if there are niche areas that we can look at together and possibly, heaven forbid, exploit together, that might be even better. So if we can do some things together to mutual advantage, that's great.

Of course, that suggests we probably need to try and build a database of what's

happening and what might be done. I think that's all well and good and I think it's always very helpful to do that, and I think if one sets about that, a body such as the Australian Vice-Chancellors Committee can always assist in bringing that about. One needs to recognise, however, that in some areas one will wander into that commercial-in-confidence type of territory and there will be issues where people don't wish to shout about or gloat about what they have achieved, but I think by and large such a database is very worthwhile and it can be used to motivate other people to get on the train, if you like.

Talking about joint literature, of course, the other thing that might be done: we in Australia periodically put out publications, books, that talk about our higher educational system and the institutions that operate within that, their particular emphases, where they're located, their size, their strengths and so on. It seems to me if we extended that, apart from doing that with an Australian perspective and no target market, it might be very interesting for two countries - in this case Australia and Taiwan - to put that information together for the collective benefit of students and other stakeholders in Australia and in Taiwan. I am quite sure that that could be done without a great deal of difficulty, because most of the information, if not all of it, would already be there.

There are a number of initiatives that the AVCC has taken in its joint working groups with other countries, and of course there is a working group that will be held tomorrow, and let me say I would have normally been a member of that committee tomorrow in the case of Taiwan and I give my apologies for being unable to be there, but I certainly hope that that initial, inaugural, meeting will be able to identify some tremendous initiatives that might be undertaken.

But some things have happened elsewhere that I think have been very beneficial. I would have to say that some of them relate to countries in which the higher education generally is much less developed than is the case in Taiwan and indeed - I think in the same way - in Australia, but there have been some very successful shadowing programs where groups of academic or research staff or administrative staff from the institutions in one country have toured the other country in order to be able to better understand the system, the structures, the nature of the institutions and how they operate in the other country, and then to reciprocate and go in the other direction, and then bring the people together for a conference and share the experiences that have been gained.

My observation, in talking to the people who have participated in those shadowing arrangements, has been that they have been tremendous. I suspect that tomorrow that might be an issue that could be addressed. Of course, one always has to resource these initiatives. That's a separate and important challenge.

Another initiative has been sometimes to try and identify routes whereby emerging research students, doctoral students, might be supervised and again to get supervisors from one country to visit the other and see how things happen, to reciprocate and again to try and work together. So there's a range of

initiatives that might emerge, in summary, that the AVCC and our counterpart group in Taiwan might identify together.

I can't stress too much the point I made earlier about trying to identify champions. I think in the case of any two countries, if you can find a small handful of areas which are quite distinctive, that really does enable the relationship to develop very, very well. Therefore, perhaps the challenge for us as a collective group - and again maybe the AVCC might continue that - is to try and identify a handful of areas where Australia and Taiwan, when looked at together, are doing something quite special and very interesting that might indeed be worthy of a national focus in both countries.

I mentioned complementary medicine earlier, but again being a little selfish for a moment, if I look in my own institution, undoubtedly my most successful research centre is in the area of plant genetics. I should say for our visitors that haven't visited the north coast of New South Wales, it's an area that probably produces a large part of the plant materials that find their way into drug discovery - and other things as well. The Australians here will laugh and mention the name Nimbin, where much of the unofficial, illegal, et cetera, marijuana is grown and where the story goes that if you want to get high you don't actually need to have a proper visit to Nimbin, you just go there, you wind down the windows of your car and you drive through the place slowly and inhale deeply. It's probably not far from the truth! The other story about Nimbin is that 90 per cent of the population fly to work each day but only 10 per cent have ever been on an aeroplane.

But my point about this particular centre is that five years ago, in the case of my university, the institution went out and tried to hire one of the world's best scientists in the area of plant genetics. Having done that, it gave him - which I guess in the case of a small, emerging, regional university like Southern Cross was a very significant amount - \$1 million Australian. But, interestingly, in the last five years a one-man show has grown to a group of 50 - I would think, unarguably, one of the top 10 or so such research centres around the world - and has raised something close to \$20 million in external funding in that time.

The reason for highlighting the point is that now we have most of our strong relationships in two or three overseas countries. In fact, the commercial work that the centre does is more for drug companies in Europe and the United States than it happens to be in Australia. So I'm just suggesting that if we could find some of those areas, they can in fact be the way to strengthening and building very strong academic relationships between two countries. I think our countries are both at that stage in our academic development: a little bit of serious thinking and I'm sure we could do more in that particular area.

Perhaps the last area - because I know that time is getting on and I would rather leave, given the nature of this topic, more time for discussion rather than me to talk to you or at you - is student exchange. In Australia, one of the great problems we have is that many students around the world like to come to Australia. That's tremendous from our point of view; we love it. Our students,

by the same token, are not nearly as great travellers in terms of travelling to study.

Australians are great travellers; I think they have that reputation around the world. But our students, in my view, tend or have tended to travel between school and university, to go and take international trips, and of course many of them, when they have completed their initial degree, their initial period of study at a university, will go off and perhaps travel the world for six months or 12 months and so on. So overall our young people are probably great travellers, but they're not great travellers while they are studying. I think that problem is getting worse, although I'm pleased to say that most of the universities in Australia are trying to address that problem.

It's getting harder. One of the reasons of course, the obvious one, is because the state of the Australian dollar makes it very expensive for our students to travel to many parts of the world. I hate to say it, but of course one of the other barriers is the language issue. Here are our visitors - and I must say I have to compliment the wonderful quality of the English spoken by all of you. I always feel very humble when it comes to these situations, when reflecting on our nation, and our student body, our inability to travel and speak in foreign tongues. That, of course, is a major impediment for young people. They feel very reluctant to go and study in a language when they can't really cope with that language. So most of our students that travel - not all, but the great majority - go to study in countries where English is widely spoken, if not the native tongue. In other cases they at least go to countries where there are courses in English that they can study.

There is a growing - it's coming from a very small base - variation to that. But again if we are serious about increasing that exchange, we need to address some of those issues. I do believe, in the case of student exchange on a worldwide basis, it probably does more for the state of the world - world peace and so on and development - than just about anything else. When students travel and see other parts of the world, they form relationships, they go home, and I think that's absolutely wonderful. Anyone that says the only reason that we in Australia try to get students to come to us, be it for exchange or just to study their degrees full stop, is only because of the economics, because of the dollars - of course, in part that's certainly true - misses the main point, the real benefit in Australia.

I have to say, as someone that came here from England in 1969, the transformation in the country in 30-odd years has been quite dramatic and that's been in part - in huge part - due to the foreign students that we have had that have studied here. They have helped enormously to transform the landscape in Australia. We eat a much better variety of food. The culture has benefited gigantically from the presence of those people. When our businesspeople travel to foreign lands, it's fantastic to find people who studied in Australia and obtained their degrees in Australia sitting on the boards of those companies and so on.

All I can say is, I for one - and I think most of my colleagues - would welcome ways in which we might try to get more two-way student traffic between our two countries and ways in which we might develop research relationships and other relationships between our institutions. I don't think I have provided you with many answers, but I hope at least I might have asked a few questions and set the scene.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月9日（星期二）

專題演講

如何促進澳洲與台灣的學術交流與合作

演講者

澳洲南十字星大學校長

JOHN RICKARD 教授

就許多方面而言，這是個相當有趣但也相當困難的演講題目，因為若要討論如何促進澳洲與台灣之間的關係，從澳洲的角度來看，很容易就離題而談到澳洲大學如何深入台灣市場與吸引台灣的學生。雖然我接下來的演講與今天的會期中不免會提到這議題，但這並不是我所要強調的重點。我今天真正要談的是如何增進澳洲與台灣學府之間的關係。

但請先容我在此談談個人的看法。我個人認為這與 Denise Bradley 教授今早演講內容有關，在研討會中也點出這樣的看法，那就是台灣的大學大多數是私立大學，而澳洲的大學則相反。但我個人認為，隨著時代的演進，這種情況會有極大的轉變。事實上，澳洲大多數的公立大學，若經過分析研究，可以說幾乎所有的澳洲公立大學越來越像私立大學，而不再像所謂的公立大學。

其中反映出政府對大學的補助日漸減少，大學必須往外發展，經營越來越企業化，尋找增加收入的其它方式。針對此現象，個人覺得在許多方面而言，這對學校有相當助益。就學校財源而言，澳洲許多公立大學的資金有一半以上必須仰賴非政府補助之管道，從這點來看，或許澳洲與台灣大學之間比大家想像中有更多相似之處。

澳洲大學最後得面對一個兩難的局面，那就是身為公立大學，我們必須受限於法律的規定與限制——誠如多位校長剛才所提及的，我們接受聯邦政府的補助，但亦必須遵守各州或各地區的法律；但若從資金的籌措來看，我們目前許多方面其實跟私立大學相差無幾。在此以「澳洲高等教育補助金」(Australia the Higher Education Contribution) 為例，這是學生所支付的補助金，然而我個人與許多校長都認為，這補助金其實比較像學費，比較像政府對學校的課稅，而不是對學校的補助。當然政府宣稱這是政府對大學的補助，因為從資金的流向而言，是先從學生到政府，再從政府到大學，但除此點之外，其實並無法令人信服。我在此所要強調的重點是，比起一二十年前公立大學經費大多來自政府補助的情況而言，現今的澳洲公立大學在許多層面反而比較接近私立的大學。

接著回到我演講的主題，在此先提供各位一點數據資料。首先，我們先來看澳洲與台灣兩地大學之間既有合作協議數目，並且比較澳洲與世界各國大學既有的合作協議數量相比較。澳洲校長委員會去年針對這些數據作一番整理，當然我相信澳洲校長委員會的數據可能只是冰山一隅，因為某些學校間的合作協議並不對外公佈，另外我也相信大多數的校長對其學校現有的部分校際合作關係並不知情，以我的學校為例，我的職員就不太希望我知道一些學校對外的關係。

但根據澳洲校長委員會這份官方的統計資料，澳洲的大學與國外大學於 2001

年時共訂立了 3,895 項的合作協議。當然其中包含已經暫停或中止的合作協議，但整體而言，澳洲的大學全球各大學之間共訂立了接近 4,000 項的合作協議，其中與台灣的大學之間則有 74 項，佔全部比例的百分之二。相較之下，澳洲與韓國兩國大學之間的校際合作協議超過 150 項，與日本則超過 300 項，與中國大陸則超過 400 項。

如此比較下，有人可能會馬上認為澳洲與台灣之校際合作關係有待加強。然如果考量人口與大學數量等因素，我個人認為目前澳台之間的校際合作關係已相當良好。事實上，我在此不一一詳列數據資料，但根據數據顯示，澳台之間有些學術機構相當積極地建立合作關係，但其它的學術機構並沒有如此，我想這是日後可以加強的地方。

另外還有一項值得討論的數據資料，就是我一開始所講稍離講題的議題。讓我們先來看看在澳洲的台灣留學生數目，然後比較在澳洲其它國家的留學生數目。根據官方的統計，去年在澳洲的學校共有 6,104 位台灣留學生，其中就讀大學者共有 2,440 位，佔總數百分之四十。

接著來看其它國家的留學生人數：在澳洲的日本留學生共有 10,000 人，其中就讀大學者共有 1,700 人，與台灣相比，留學人數雖高，但就讀大學者比例稍低；在澳洲的印度留學生共有 18,000 人，就讀大學者約佔一半，超過 9,000 人；在澳洲的中國大陸留學生共有 15,000 人，就讀大學者共 3,700 人。若拿台灣與印度中國大陸相比較，若照人口比例來看，我們發現台灣學生來澳洲留學的人數事實上相當多，而且值得注意的是，其中就讀澳洲高等教育學府的比例相當大。

不過我要再度重申，這並不是今天會議的主題，真正的主題是如何建立與改善澳台兩地大學的關係。我個人的看法是，如果從管理與行銷的角度來看，重點在於如何建立管道及關係行銷，以管理學的講法，就是要把客人或顧客轉變成支持者與宣傳者，口耳相傳。

我想今天齊聚一堂也是為了這樣的目的，今天舉行這樣的會議，彼此先有初步認識，建立基本關係，若真有心發展進一步的合作，則必須把初步的關係進一步互動，達到具實質意義的往來。我們要培養更多的熱情份子，鼓勵這些熱情份子以增進校際關係為己任，在校園裡鼓吹推展校際關係的火花。

為了達到拋磚引玉之目的，我在此向大家提供一些建議事項，這只是我各人意見的淺見，並沒有特別整理過。就拿印尼為例，最近澳洲聯邦教育部國際教育處 (Australian Education International) 和教育部出版了介紹印尼科技發展的熱潮及

相關補助，我並不確定名稱是什麼，但我認為對澳洲高等教育有極大的宣傳幫助。

我個人認為大家可以從兩方面著手，一方面是觀察目前澳台兩地學府在科技領域的合作現況，一方面則是出版合作的研究資料，同時也許可尋求外界的資金贊助，諸如澳洲政府的贊助，或是台灣政府的贊助，而且要釐清澳洲和台灣各自在做哪些研究，以及兩者重疊的地方。

我個人認為澳台兩地大學間已建立相當有意義之關係，我也相信尚有待開發的空間。這次的會議讓我聯想到本校在另類醫療學領域上的發展，南十字星大學為全澳洲唯一頒授自然療法學位的大學，這是項符合邏輯之自然科學，台灣、中國大陸與香港等地的學府日後可能亦會朝此方向發展，而本校將可與這些學校分享專業經驗，達到彼此之合作關係。當然，在某些領域中，本校所能提供之協助不多，仍有許多有待從他校學習之處，但個人認為這樣的交流對各校都相當有意義。

如今我們有機會先來探討可以合作的領域，若日後真能更進一步，找出可合作的領域，並且我們能有幸合作，在該領域共同探索，此等結果更是令人滿意。如果我們能共同努力，達到雙贏的結果，豈不是美事一件？

為了達到這樣的目標，我們也許該事先建立好資料庫，對某領域過去與今的研究資料作一番整理；我個人認為此資料庫之建立有其必要性，日後一定大有用處，當然若有人願意著手，我想相關機構——例如澳洲校長委員會也一定樂於提供協助。雖然在有些領域的部分資料涉及研究機密，有些人亦不願將研究發現大肆宣揚，但我個人認為建立此種資料庫有其價值，並能促進日後相關研究的發展。

另外我想談談聯合出版，這是另一個可以合作的項目。在澳洲，我們會定期出版一些書與出版品，介紹澳洲高等教育系統與各大學的相關資訊，如地點位置、專長研究領域與優點等等。這些出版品全然從澳洲的觀點出發，並未鎖定特定的海外留學生，我個人認為若能跳脫這些限制，結合澳洲與其他地方學生的角度，收錄些對兩地學生與相關人員有幫助的資訊，這將是一件有意義的事情。我相信要達到這目標並不困難，因為幾乎所有的資訊已經是現成的，只需加以整理與編輯。

在與他國的聯合工作小組的合作上，澳洲校長委員會已經採取幾項創制議題，明天就有一場工作小組會議。請容我先向大家致歉，我明天無法出席該會議，不過我誠心期望該首次會議能找出可以先進行之重要議題。

但在此值得一提的是，許多高等教育發展不如台灣與澳洲的國家，其隨行觀摩計畫相當成功，這點個人認為亦相當有幫助。在此計畫中，學校的學者與學校行政人員到國外學校參觀，進而更加瞭解國外學校的系統與結構，學校的本質與運作方式，然後與國外學校有所交流，最後集合所有計畫參加者開會，並分享每個人所得的經驗。

在與這些參加計畫者談話後，我個人認為此種計畫效果極佳。也許明天的會議就會討論這種計畫。當然，像這樣的活動需要有足夠的資源，這是另外一項重要的挑戰。

另一件議題是如何為博士生與研究生安排接受指導的方法，與如何讓指導教授到不同國家，指導學生研究的進行，進而有所交流與共同研究。明天澳洲校長委員會與台灣代表所開的工作小組會議中可能會討論這些創制議題。

接著，我想再度重申剛才所講的熱情份子之重要性。我認為在兩地學校的研究合作上，若能有獨特之合作領域，對合作關係之發展將有極大助益。因此，身為合作之伙伴，澳洲與台灣兩地之學府應該要找出獨特且有創見之領域，值得兩國投入心力進行研究。

我先前提及本校在另類醫療學之特色，在此請容我自私地再為本校宣傳一下。本校最成功的研究中心所從事的是植物基因的研究，各位若沒到過新威爾斯州的北海岸，請讓我為您介紹一下，這地區盛產許多做為製藥與其它用途的植物。在場的澳洲人聽到這裡也許會開始忍俊不住，講出 Nimbin 這個地名。這個地方盛產許多非法麻藥植物，諸如大麻等，據傳如果有人想吸毒，到 Nimbin 這裡根本不用下車，只要開車時把車窗搖下來，一邊慢慢開車，一邊深呼吸就好了，也許事實與這傳言相去不遠。另外也有人說 Nimbin 的居民有百分之九十每天是用飛的去上班，但只有百分之十的居民曾經坐過飛機。

撇開這些笑話不談，我的重點是本校植物基因研究中心便是向外發展的結果。本校在五年前極力聘請一位在植物基因研究上世界級之科學家，以一百萬澳幣做為聘請薪資，對南十字星大學這樣發展中的大學而言，這已經是相當龐大的金額。但值得注意的是，經過五年之後，原本只有一人撐大樑的研究中心，現在成員已經增加至五十人，可列為全世界十大植物基因研究中心，並且所吸引的外界資助共達近乎二千萬澳幣之多。

我之所以強調這點，是因為透過該研究中心，我們已跟二至三個國家之間建立起密切的合作關係。事實上，對歐美藥廠而言，重要的是本校研究中心所研發

之結果，而不是這是間澳洲學校的研究中心。所以我想建議的是，如果我們能找到像這樣的獨特領域，則可增進澳台兩地之間的學術關係。我想澳台兩地皆處於學術發展的階段中，只要認真思考，找出共同的獨特領域，相信我們在該領域將有更進一步的合作。

因為我知道時間已剩不多，且就題目之本質而言，我應該多留些討論的時間，而不是讓各位一直聽我演講，最後我想談談交換學生的事情。澳洲的大問題是全球有許多學生很喜歡來澳洲求學，從澳洲的角度，這當然是件好事，我們樂見其成，但是澳洲自己的學生卻不熱衷到國外唸書。

澳洲人其實相當喜愛旅遊，我想全球對澳洲人都有這樣的印象。但我個人認為，澳洲學生傾向在高中畢業升大學期間，參加國際性的旅遊活動，然後等到其中大多數人在完成大學初步學業之後，也許會花六個月到一年的時間環遊世界旅行。所以整體而言，澳洲的青少年喜歡旅遊，但是當他們在校唸書時，則鮮少從事國外旅遊的活動。雖然澳洲許多大學試著解決這問題，但我認為這個問題越來越嚴重。

而且這問題也越來越難改善。其中一項原因是澳幣的幣值現況，讓澳洲學生出國旅遊的費用相對提高；另外還有一個原因，說來有點慚愧，則是澳洲學生語言上的障礙。來澳洲之觀光客與留學生，個個英文程度優異，令人印象深刻，而反觀澳洲國人與學生，有時因為語言障礙而無法前往某些國家。而語言問題，對青少年之學習無疑會造成障礙，他們不願意到一個語言不通的國家唸書。所以大多數澳洲學生在留學時，會選擇到英語系國家或是到普遍說英語的國家，不然至少會選擇有英語授課的學校就讀。

這種問題稍微有所改變，但目前改變並不明顯。但如果澳台兩地學校若真要增加交換學生的人數，便必須解決這些問題。我相信在各國彼此間交換學生之影響下，對世界和平與發展等全球議題上將有莫大幫助。當學生能在國外旅行，增加對當地的見聞，與當地建立關係，然後返回家鄉。我想這將是美好的人生經驗。或許有人會認為，我們澳洲的學校如此積極招生，不論是交換學生或是留學生無所不包，這一切只是出於經濟考量，只是為了賺取外國學生的學費，這樣的說詞有部分是一正確的，但卻忽略了一最重要的一點——吸引國外的學生對澳洲的發展絕對有所幫助。

就像在 1969 年英國人初次抵達澳洲所說的，我必須說這三十多年來，澳洲已經改變了許多，其中大半的因素便是外國留學生所造成的影響，他們不僅改變澳洲的風貌，豐富了澳洲食物的風味，澳洲文化也因為他們而受益良多。當澳洲商

人出國洽公時，發現與其接洽的對方便是曾於澳洲留學的學子，感覺將更為親近。

我最後想說的是，雖然我這是個人的發言，但我想這也是大多數的校長同仁的想法，我們誠心樂於採用任何方式以促進澳台兩地學生之交換，發展兩地校際合作研究與其他合作關係。我不知道我的演講是否提供了各位答案，但我希望至少帶給各位值得思考的問題，探討未來的發展方向。

HOW TO PROMOTE ACADEMIC EXCHANGE AND COOPERATION BETWEEN AUSTRALIA AND TAIWAN

Dr. Sun Ma
Huafan University
Taipei Hsien, Taiwan ROC

ABSTRACT

There has been a dramatic change in human life in the last decades, the biggest of all is the change of people's thoughts, which were brought about by the advanced technique of the multi-media today. Messages and ideas can be immediately transmitted to the other end of the Globe via electric communication. These messages will have tremendous impact on people to widen their thoughts and give them notions of what is new and what is possible. Investment and development have been done in these fields across the nations and the results are exceptional. In the global village of today, internationalization and modernization play a key role among academic institutions in offering possibilities and opportunities for mutual exchanges and cooperation. It is an exciting moment, a time of hope, and a time to make dreams come true.

Academic exchanges and cooperation between Australia and Taiwan have been performed quite successfully in the past through the efforts of the Australia Educational Center of ACIO, which represents the Australia Government in Taiwan and the Cultural Division of the TECO, representative of Taiwan in Australia. To extend the works based on their achievement, we seek for further possibilities for collaborations. To improve the quality of education in the future, we still have a lot of common issues to deal with. It would be advantageous for us to share our experiences with each other; the area for cooperation is unlimited.

I listed the names of organizations which may function as initiators of cooperation: starting from the Government to Government level, and through the cooperation between AVCC to APUC (APUC), Conferences initiated by the Academic Societies, or collaboration between universities, where joint programs can be taken place effectively. The Australia Research Council and the National Science Council could support the research fund for joint research projects of common interests. Collaboration can also be directed towards academic Conferences, seminars, workshops, exchanges of scholars, etc. In order to give students a broader worldview, it is essential to work out programs such as 2+2 or 3+2 or short-term visits in universities abroad, where they learn from different people, with different language and under a different culture.

In recent years, Taiwan has been trying to improve its international relationship. One advantage in academic exchanges and cooperation is to extend the diplomatic relationship through mutual contact and understanding. In doing so, Taiwan will be recognized as a democratic and free country and surely will receive friendship from peace loving countries all over the world.

The topic of my presentation today is "How to promote Academic Exchange and Cooperation between Australia and the Republic of China, Taiwan. For many years Academic exchanges between Australia and Taiwan has been doing fine through the efforts of AEI (Australia Education Center in Taiwan) and the Cultural Division, TECO, (Taipei Economics and Cultural Office, Australia) the latter being established in Canberra 1994. These two organizations were under the infrastructure of ACIO and Educational Council, representing Australia and Taiwan respectively. Their purposes were to stimulate greater public interests in and better-informed public opinion regarding education and culture in each other's country.

As the pace of globalization intensifies, we realize that the international communication is much more urgent than before. In Taiwan, we have been discussing enthusiastically about issues that are likely to happen after entering WTO. There will be severe impact that accompanies the changes; only those who are aware of keeping pace with the world shall survive. Therefore, academic exchanges will be far more active than in the past decades. On the other hand, we see numerous possibilities and opportunities for educators and scholars through cooperating with their counterparts all around the world. Through mutual visits and exchanges, the accumulation of knowledge will speed up: this is one of the characteristics of the 21st Century.

Due to the fact that people of Australia and Taiwan have different cultures, each remains unique in its own way. In so far as education is concerned, Australia has won itself a reputation especially in the area of educational regulations. In recent years Taiwan has launched a vigorous campaign for educational reform, undoubtedly we can learn a great deal from your experiences. Your achievement is a precious inspiration for us in Taiwan at a time when our Ministry of Education is adopting a new

policy to decrease its central control over higher education. Just like an old Chinese proverb says: "The rock of neighbouring mountain can be a whetstone to rectify our faults."

To internationalize our education, we can use all the help we can get. By analogy, some successful attempts experienced by Taiwan in recent years might also be of some referential value to Australia. For example, in the past Taiwan had maintained a very large number of students doing advanced researches in America and Europe and it turned out that when these well-trained professionals, upon returning from abroad, proved themselves to be instrumental in the shaping and creating of our economic boom. We have in a way built up a rather solid foundation in our higher education, which emphasizes academic exchange and cooperation more than anything else. This is one area in which everyone wins and benefits go to everyone. With wisdom and determination of people like you here, of both Australia and Taiwan, it is highly hopeful that our ideal of academic exchange and cooperation will become a reality.

As for the question "How to promote academic exchange and cooperation?" Let me list a few points in their hierarchical order:

Government to Government: The foremost important thing is to get attention from both governments, especially in the offices whose main duty is education. The upper level officials must have a comprehensive understanding of the situation to undertake the planning involving two countries. Their positive intention and sympathetic attitude are vital to success for the individual institutions engaging in such activities. On the part of the governments, they must be sure to make a budget beforehand to warrant the execution of the planning.

On January 20, 2000, a Memorandum of Academic Cooperation was signed into effect by Australian Vice Chancellor's Committee (AVCC) and our Association of Private Universities and Colleges (APUC). We expect to see a similar memorandum be made to include the Association of *Public* Universities and Colleges. With the participation of AVCC and the two Associations, the tasks of cooperation between Australia and Taiwan would gain a considerable momentum. The members of these Associations are comprised of college presidents and it will be as effective as an umbrella for them to cover all the institutions within the membership network and to furnish with information and incentives to those who have an interest to get involved. It is advisable to work out a collaborative plan to assess the growth and development in every academic year. Areas reviewed through this plan may include: conferences, exchanges of professionals, short study tours, joint academic programs, etc.

To strengthen the understanding about higher education in Australia and Taiwan, we may as well make the best use of the International Centers already in existence in many universities. The logical first step is still to work out an official memorandum in order to establish channels of communication. But most memorandums unfortunately remain a mere piece of paper signed by executives of both parties and nothing more. They do not vouch for any reality or action. As a matter of fact, even website technology and the so-called global village convenience have opened up more space for cooperation, we still feel the signing of a contract is a most advisable choice. It is through such a document that we initiate exchanges, get into more contacts and find a common point for the application of our forces. These collaborative arrangements may involve the recruitment of foreign students, development of joint ventures, faculty and students exchange, short study tours, workshops, seminars, and other initiatives as approved by both institutions.

In general, every profession has its professional society. We should encourage these societies to sponsor conferences to promote researches and other activities. In Taiwan there are Mechanical Engineering Society, Electronics Engineering Society, Chinese Physics Society, Chinese Chemistry Society, et cetera, they can organize conferences with corresponding partners in Australia and open up traffic for collaboration. In order to pursue academic excellence, both governments need to encourage joint ventures whenever possible.

Individual to Individual: As for the quality of collaboration, we rely on the individual scholars themselves engaging in the undertakings. Scholarship sees no national boundaries; it marches with the world. In Huafan University's Department of Mechanical Engineering, for example, we have an Associate Professor Pang Ta-cheng who goes to Australia every summer to collaborate with Dr. Zmood of Royal Melbourne Institute of Technology (RMIT) in the study of micro magnetic bearing. Their work has yielded an impressive result due to their combined efforts. In fact, university faculty members in Taiwan usually have a rather heavy teaching load. They can only travel abroad for a short-term research, either on sabbatical leave or during summer vacation.

ARC to NSC: The Australia Research Council and the National Science Council should identify certain areas of common interests, call for proposal on a Joint Venture basis, set a budget and finally find the right person to do the right work. As Mr. Noakes, Director of AEI in Taiwan, once suggested: "There is quite a great deal of sharing interests. Biotechnology and Molecular Biology for example, Australia has a fair degree of expertise and so has Taiwan." It happens that we can always find common grounds where expertise is demanded for scholars of both sides.

By what means can we do academic cooperation? My suggestions are as follows:

Conventions like this one we are holding could prove helpful. In such gatherings concerned people can meet face to face and talk over related subjects. As exchange activities are increasing worldwide, conventions could provide most up-to-date information in the field and should be highly recommended. To make the best use of such occasions, it is advisable that the hosting parties arrange tours around campuses as a means to introduce their general and unique features, which the visitors might want to see in the first place. It would be nice that such a convention could someday be held in Taiwan. It would enable the presidents of Australian universities to observe the conditions of Taiwan's education at first hand. Also, it will do us good if we can have conferences on a more regular basis. They do offer best opportunities for scholars from both nations to know each other's progress and development. Matter-of-factly, professors and students are playing a very important role in exchange programs. With a short-term visitation, the host needs to supply all necessary assistance and accommodations in order to facilitate the visitors' getting into situations quickly and obtaining all the material and information they will need. This will eventually pave way to a more friendly relationship on which to build long-term projects.

The third element in this connection is culture. Education cannot be isolated from culture. Australia and Taiwan have cultures of their own --- in history, language, and social background. Having come a long way from the days of British colony, and through absorbing cultures of a European tradition and native spirit, Australia has now emerged as a nation of versatility and uniqueness. Likewise, Taiwan has sustained different passages of time. Although in the main it has inherited the age-old Chinese culture, it had been occupied however by Japanese government for over a period of fifty years and went through yet another cultural change after its returning to the Chinese Republic. Such are the factors under which a modern Taiwan has been shaped. Culture is the most precious prize produced by human history. Nothing is too much for its preservation. For its more valuable parts, we must learn to love and pass on. We understand that the official language in Australia is English, which happens to be the most widely spoken language in the world. It is known today as an international language or a communication tool, without which no goals of modernization can possibly be attained. Yet, if we look deeper into the future, it is fairly clear to see the potentiality of the Chinese language looming on the world scene. China today has a population of over 12 billion and is working diligently to modernize itself with an intention to be part of the world. Its education cannot lag too much behind. The last twenty years was pivotal to them. Once the switch is on, opportunity follows. China's modernizing movement should accelerate its cultural activities. Once it has reached its expected destination and become a developed country, its large population shall dictate an alternative language for the world to cope with. It is therefore reasonable to predict that the Chinese language would finally join with English in the main stream of world languages and obtain a sense of importance. At this moment, Australia and Taiwan can give unquestionably each other languages and cultures in addition to educational cooperation. If we can offer Chinese language and culture as part of the exchange, so can Australia offer English and their culture. Humans are enriched by culture. Culture of quality never fades. On the contrary, it grows, assimilates, and becomes even richer and better as time advances. This is just another important consideration I hope we do not lose sight of.

Distant Collaboration: Joint venture can be facilitated by electronic communication, either interactive or non-interactive.

- (1). Interactive mode: Real time presentation via video, audio or chat. Share Graphics or share programs with conventional application Soft wares. However, real time video presentation is still limited by Bandwidth, where audio technique is in good shape.
- (2). Non-interactive communication: E-mail is the most widely used communication tool; there are lots of possibilities for sharing interests and ideas. Besides, Curricula materials on website will be shared among partners, they will serve as a guide in selecting visiting faculty.
- (3). There is Knowledge Base for both partners to share.

Geographically speaking, Australia and Taiwan have their differences, too. Taiwan is a small island with high density of population and an economy depending mainly on imports and exports. Australia, on the other hand, has a huge territory and is rich in all sorts of resources which impress a visitor tremendously. When we arrived in Australia, for instance, the first thing we discovered was Nature herself and we felt an immediate urge to take a deep breath and relax. Taipei gives our Australian friends a different sort of greeting. They would see a sizable city of the East with variegated urban projects still going on. They would of course see the magnificent Palace Museum, but they would also have a taste of the hustling-bustling style of life typical of a metropolis. It is within our comprehension that knowing well of each other's environment would help accelerating the pace of cooperation. Efforts put out by colleges and universities from both sides are of course indispensable toward realizing our ideals.

As our Ministry of Education is loosening its usual grip, Taiwan's educational institutions are beginning to feel a sense of freedom in matters like student recruiting, renovation, and making up policies with more flexibility. Professor Lin Cheng-yi, of University of South Australia, for example, comes to Taiwan regularly to set up classes to train management personnel on an advanced level. There is still plenty of room for further development. Academic degree programs like 2+2 or 3+2 are areas worth exploring. For instance, students from A University who have completed their second year of college credits (60 credits hours) may transfer to B University to complete his Bachelor's degree. A and B universities work together to complete the student's transcripts. Another possibility is to select students with opportunity to complete Bachelor's degree within three years. Upon completion Bachelor degrees in A University, eligible students will be admitted to one of the Graduate program offered by the B University. In essence, student participants would earn both Bachelor and Master degrees in five years.

One of the Chinese classics, *I Ching*, or *The Book of Changes*, is well known for its meaningful predictions. In the first diagram, "Yuan Heng Li Cheng" (Sign of the Great Sacrifice and Auspicious Omen), when it comes to deal with the subject of expeditions, it comments: "Go for it! It is auspicious!" In plain words, it means to travel from one point to another brings in benefits. Comparing with academic exchange and cooperation, focus of our talk today, they seem to be the kind of expedition *I Ching* would patronize and consider auspicious. We can't go wrong from there. It is a win-win situation. In a way to make a conclusion for my speech, let me borrow *I Ching*'s wisdom and say: Go for it!
It is auspicious!

Thank you all!

INFORMATION AND COMMUNICATIONS TECHNOLOGY RESEARCH IN AUSTRALIAN UNIVERSITIES

Chris Marlin

Vice President and Pro-Vice-Chancellor (Research)
Flinders University

ABSTRACT

Australian universities face a number of challenges in maintaining strong research and education programs in Information and Communications Technology (ICT). These challenges are shared with all countries with a well-developed ICT industry sector. They include difficulties in attracting and retaining well-trained academic staff with a practical orientation, and those in encouraging sufficient students to continue to doctoral study and to engage in a research career.

Nevertheless, Australia performs well in ICT research for its size and there are research strengths in a number of key areas of ICT. Some novel approaches to focussing research effort have been developed in Australia, and these have been employed in relation to ICT research in universities.

Mutually beneficial relationships with industry are crucially important in ICT. A number of models have been used in Australia to encourage collaboration with industry; experience with these has been necessary to identify those which represent the most successful ways to encourage such collaboration.

Equally important is collaboration between universities. Cooperation between universities which are otherwise competing in various ways frequently proves difficult, but some approaches to cooperation have proved successful in ensuring that all parties find the venture to their advantage.



SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

**TRANSCRIPT
OF PROCEEDINGS**

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

FOCUS SESSION:

**RESEARCH - INFORMATION AND COMMUNICATIONS
TECHNOLOGY**

SPEAKER:

PROF CHRIS MARLIN

PRO VICE-CHANCELLOR (RESEARCH)

FLINDERS UNIVERSITY OF SOUTH AUSTRALIA

PROF MARLIN: What I would like to do this afternoon is to talk about research in Australia in information and communications technology and, in doing that, I would like to talk about it under these separate headings. Essentially, what I would like to do first is to talk about some of the challenges that face us in Australia and, I suspect, in Taiwan as well, in terms of maintaining strong research and education in ICT, and they go together I think. The challenges are often common challenges, particularly in terms of attracting and retaining suitable academic staff.

- Attracting and retaining suitable academic staff.

We have a lot of problems in that area and I'll explain what's happening there and what we can do about it perhaps.

- Encouraging students to go on to doctoral study and academic or research careers.
- Some approaches used to focus research effort in Australia.

Some of those were mentioned before lunch in terms of biotechnology and so there's some common ground there because they're very similar approaches.

- Looking at some areas of ICT research: Strengthen Australia.
- Looking at collaboration with industry.

This is absolutely essential for this discipline. It's an inherently practical discipline and so you can't imagine how you could have research without collaboration with industry.

- Looking at some cooperation with universities.

I will be picking up on some comments made by President Lee last night about collaboration and cooperation versus competition, which I think is something that faces universities in terms of research as much as industry, particularly in the climate we have back here of the difficulties of attracting and retaining academic staff. In particular I have a look at some of the things we've been doing in South Australia as an example.

The first challenge is in terms of attracting and retaining academic staff. The student-staff ratios you can use as a guide to how we're going in terms of Australian academic staff, in computer science in particular, and across all fields of ICT a recent report shows us that the ratio of students to staff has increased from 14.6 to 1 to 27.5 to 1. That's not because of funding. That's simply because of the difficulty of getting academic staff of a suitable kind.

If we look then at what's happened within computer science, it was already 27 to 1, which is now the average for ICT, and now it's gone up to 51.5 to 1, which is an extraordinary ratio that most people outside the discipline don't

believe when you first present it, but the data is available to back that up. So this is a very significant problem if you think about research capacity and the ability of academics within universities to carry out research.

It is a long-term problem. I started my academic career in the United States in the early 1980s - in 1980 in fact - and I thought when I left my position as head of computer science at Flinders in 1988 that I'd never been in a computer science department anywhere in the world, across three continents, where the academic staff was at its full complement. Everywhere I'd been throughout that whole career, we had been trying to recruit academic staff continuously. There were always vacancies. This is shared with all countries that have a well-developed ICT industry sector. It's very hard to get academic staff within this area. Increasingly, what we're doing to address this is to look at the problem jointly with industry, because it is a shared problem.

Another problem that's related is: how do we encourage our students to continue on to research careers, in particular to engage in doctoral study? I will show you some figures in a moment, but the numbers of PhD students in these fields is quite low compared to other fields. Various factors in a recent survey which was conducted - the same one as I referred to on the previous slide - indicate that from the university department's point of view, academic careers are not attractive sufficiently in relation to other options for these students, the incomes of research students are very low compared to their classmates who have gone on into industry immediately, and the talented graduates can earn very high incomes in industry eventually. There are probably also very low completion rates in terms of people doing research degrees such as PhDs, but reliable data is very hard to come by.

If we have a look at the situation in terms of the ratio of undergraduate students to research students by discipline, these are the figures for Australia in 1993. We see the ranking here. This shows that, in terms of the natural and physical sciences, the ratio of research students to undergraduate students was about 0.16, which means about 16 per cent. That's not 16 per cent of the total students, but essentially it means that for every research student, for every undergraduate student, there's 0.16 of a research student.

We see in this ranking that information technology is right down the end, just slightly above management and commerce, in 1993. If we go to the more recent figures, what we see is that the situation has got even worse and now information technology is at the bottom, so the attractiveness of going on to do PhD studies, in particular in relation to undergraduate studies, has got worse in terms of information technology. The rest of the rankings are very similar, except there's been a bit of switching around but not significant. So information technology is an area in which it's extremely difficult to get research students and very easy to get undergraduate students who want to go on and earn lots of money in industry. This is a problem that's not unique to Australia. I'm not suggesting that, but it's a problem that affects the discipline and its ability to carry out research.

In terms of looking at approaches to focusing research - and we have had some discussion this morning in the context of biotechnology about some of these - various approaches have been tried in the past that were not successful. One that wasn't mentioned this morning is what was called the teaching company scheme, which was where essentially research positions in industry in Australia were funded jointly by the government and the company in order to encourage them to do research. What happened, at least in the IT and ICT sector, is that at the end of the funding those people were sacked. The industry didn't pick them up. It was meant to kind of seed activity, that in some sense the industry would get hooked on having a researcher in their organisation and, when the funding ran out, the industry would replace the government funding. It didn't happen in general and it didn't lead to much long-term impact in research in industry.

The Cooperative Research Centre's program has already been mentioned as very successful. In fact, it's widely known internationally, but unfortunately there are relatively few cooperative research centres in ICT. It's a little bit hard to classify them. There are a few, but much less than in other sectors and significantly less, for example, than what is the case in biotechnology.

There have also been various difficulties in gaining levels of ICT industry support not just for cooperative research centres but for other purposes, and in particular, in something like the Cooperative Research Centre's program where part of the criteria in judging an application is to look at the level of commitment of those industry partners, it often is not as strong as you would have in some other industry sectors. In an industry sector such as mining, for example, typically the industry partner is very committed to the research, indicates how they're going to use it. It's often an Australian company doing the mining. In the case of ICT it's not so clear how they're going to use the research, and also the company is frequently a multinational company and so the government is perhaps a little cynical about putting some money into that. But it's made it quite difficult to use the Cooperative Research Centre's program as a way of encouraging research in ICT.

There have been a number of reactions to that and looking at alternative models. One of the things that also was mentioned this morning is that ICT is one of the two areas in which the government has established these national centres of excellence. There's a process currently going on - at this very minute; the interviews happened last week - for an ICT centre of excellence. The funding is quite significant and is in fact significantly more than for biotechnology, at \$130 million Australian over five years, and the goal is the obvious one: to create a world-class research and research training institute that takes Australia's ability to create and exploit information communications technology to a new level. So the advisory panel will make its recommendation to the government in May and there will be some announcement at some point after that.

So that's a very significant development but has led to the kind of discussion that we had this morning about biotechnology, about whether that will be a

single centre or whether it will be distributed and dispersed. There have been various answers to that question along the way but, essentially, the answer that appears to be the government's position is that most of it will be in one place - perhaps 70 per cent - and the remainder, say 30 per cent, will be in one or two further places. That's just my interpretation of what's being said; that's not at all an inside knowledge or anything. But from what I've heard from the briefings, that's about the best that I can get, which is an interesting model for trying to balance those things.

As was indicated in relation to biotechnology, the idea is to try to grow the number of working in it, so the research training is very important here, and also to try and attract back to Australia a number of Australians who are overseas. In a sense, Australia has a very similar problem to Taiwan, particularly in ICT, where a lot of our Australian-trained researchers have gone off and worked in the United States or in Europe, and if we could bring those back we would have a very significant research capability in Australia. I was one of those who left Australia as soon as they got their PhD, so I have that personal experience.

Also, the Australian Research Council has announced four priority areas. These include two of relevance: complex intelligence systems and photon science and technology, which is largely telecommunications technology. The minister has announced that 33 per cent of the funding in the coming round of funding will be targeted to those four areas, so you might think that there's about a sixth of the ARC's funding which is notionally associated with these two out of four areas. That's very significant as well. So there are ways in which the government is trying to boost research investment in ICT.

In terms of the areas in which Australia appears to have some strength, there are various ways you could look at this. All I have chosen to do is to pick on some particular centres and other indicators of where that strength might be. There are other ways you could look at this and you'd probably come up with some different answers.

In terms of cooperative research centres, there's one for enterprise-distributed systems, which came out of the distributed systems technology CRC headquartered in Brisbane. That is a very significant CRC and builds on a long experience in distributed systems and it's a significant area of strength for Australia. There's one for satellite systems which is based here in Adelaide at the University of South Australia. Smart Internet Technology has a very large number of universities involved. There's one for technology-enabled capital markets, which is a newish one. There's one for sensor signal information processing, also based here in Adelaide and also at Mawson Lakes campus of the University of South Australia. There's also one in telecommunications, which I think is based in Perth, and the Australian Photonics Cooperative Research Centre, which has been quite successful in commercialisation, is based in Sydney at the Australian Technology Park.

On this slide I have just picked out some other activities, fairly randomly

chosen, to give some idea of some other things which are starting to emerge as strengths. There are a number of special research centres in other areas, but there's one in quantum computer technology that seems to have gained a lot of visibility internationally, and certainly their press releases claim that they are first in the world in terms of aspects of quantum computer technology. I think there are several groups around the world who would claim that, but I think they're up there with the best, and there's a Federation fellowship that's been awarded in that area as well, which is a very significant thing in Australia.

The Motorola Australia Software Centre is worth mentioning in terms of my own field, software engineering. Motorola has invested significantly in Australia. Its primary location is in Adelaide and there are I think now something like 400 software engineers here. I spent a sabbatical there for six months about three years ago, so I know it quite well, and there's quite a lot of innovative work going on there and a lot of research in terms of different aspects of software engineering. They have also set up in Sydney - that's their next location - and now they have set up in Perth as well, and in each case there are strong associations with the local universities and there is an injection of ideas.

Unfortunately, also it illustrates another point I was making earlier in that a lot of university staff have moved across to Motorola from the universities. In the case of one of my PhD students who was doing a part-time PhD with me, she moved across from a lecturer's salary to a professor's salary the next day, and it's very hard to compete with that kind of thing. In fact, I have lost - if I could put it that way - two or three of my PhD students to Motorola. They are very happy, and the partial PhD training was very useful, but it does unfortunately mean that, in terms of this stock of researchers in Australia, these kinds of developments which are positive in other ways have some negative implications - for research at least.

Another thing which I will mention, because we are sitting right in the area of it, is mNet Australia. Australia had an advanced networks program a year or two ago. There were three projects funded and a very significant one is this mNet Australia which is developing a state-of-the-art wireless local area network along North Terrace here. So we are actually in that region. When the World Congress on IT was held just across the road here, there was a trial network running and so people had hand-held 3G devices; they could give them information in terms of tourism and other things. That was running in Adelaide just a month or two ago. It's very expensive to run, so I think it's not actually running at the moment. It will be running again in the next phase. But it's an interesting development. I know in other universities, and probably in Taiwan, people are starting to talk about post-3G, but at this stage 3G networks themselves aren't properly implemented and certainly the applications aren't convincingly available yet.

To discuss a couple of other topics that I think are important, first of all collaboration with industry - and I have touched on this as we go along - this is very important in ICT but includes some inherent dangers, as I have already

mentioned. In Australia, the ICT industry is characterised by two groups of companies in general and they're fairly clearly split. First there are the local Australian companies, which tend to be relatively small and have relatively short-term goals and little time for leading-edge research. They're not quite living from hand to mouth, as we say in English, but they've not got a lot of capacity to engage in big-deal research.

The other thing we have is multinational companies and, typically, their leading-edge research is carried on outside Australia. Motorola is an exception to that and I hope there will be further exceptions in the future, but the pattern in the past has been that the research laboratories are, particularly, in the United States and so anybody who is any good who works for these companies is taken offshore to the United States at a fairly early stage in order to engage in that.

What we have tried to do in Australia is to look at a number of mechanisms to promote and understand the opportunities for collaborative research with both those groups, and in my own case I've tried to focus on the first group because I think that's where the hope lies. If we can engage that group of companies and show them that research is valuable, then I think we've got a better chance to build up a long-term industry in Australia that has an interest in research.

Another thing that's happened is that a number of ICT companies have developed out of university research. For example, as part of this World Congress on IT that was held across the road here, which had something like 2,000 delegates at it, there was a competition run by the Australian government called "Discover the secrets of Australian IT innovation". What they did was to survey Australia, and they had about 250 companies put themselves forward as possible prize winners in this list of companies, which were supposedly the secrets of Australian IT innovation.

If you look down that list, a number of those companies have university origins. I looked down the list and picked out the ones that I knew or could find out about easily. DSTC Pty Ltd came out of the DSTC Cooperative Research Centre in Queensland. Three in South Australia - and it's probably because I know the South Australian ones better, although the list for South Australia was a bit longer, I have to admit. There was FourSticks as well; I missed that one off because I couldn't find a web site. Your Amigo is a Flinders derived company; Maximine International; and DSpace, a University of South Australia derived company. In terms of communications, Redfern Polymer Technologies in New South Wales, which also came out of a CRC is another example.

As I mentioned a little while ago, one of the big issues in terms of dealing with industry and also dealing with the situation between universities is the question of whether we cooperate or compete. President Lee mentioned that last night in other contexts in his talk. The cooperation between universities in the context I've given you, which is where universities find it very difficult to identify academic staff and to retain them, is extremely important. We don't

want to be fighting with each other over a limited resource and just have people cycling around between universities. We ought to be finding ways in which we can cooperate and create a stronger university system.

What we did here in South Australia about four or five years - and I've been the chair of the steering committee since then - is form what's called the South Australian Consortium for Information Technology and Telecommunications, and this is where the three South Australian universities cooperate both in education and research in information technology and telecommunications. It's been supported by the state government, which some funding that allows us to hire some additional chairs in IT&T areas within the universities. It has an industry advisory board, which is takes very seriously, and it's pursuing a particular model for research cooperation across the state.

What I'd like to do to finish off is to explain very briefly how that model works but, before I do, the issues in here - just to point them out - which most of you would be familiar with anyway, are the sorts of issues we were talking about before, to do with concentration or dispersal. If we concentrate our research capability, for example, in a particular area of IT&T - let's imagine, because it's my field, that it's software engineering. So if we put all the software engineering researchers on one campus or in one university, what do you do about teaching software engineering everywhere else within the universities? And in our case there are at least eight university campuses in South Australia that teach some form of information technology.

What you would like to do is have good, strong academic staff on all those locations, but certainly you'd like to have good, strong academic staff in IT&T at all three universities across all the major areas in which you would normally teach in terms of IT degrees and engineering. So the model that we have been pursuing is this one here, where we have three universities in South Australia - let's call them university A, B and C - and what we create are research nodes, and for each research node there's a research leader. This was relatively easy as a structure for us, because the state government money they gave us was for some professors, so essentially we didn't even have to necessarily retrain our old professors. Our new professors became these research leaders and one or two of the existing professors also took on that role; others didn't so much take on that role.

Then what happens is - if you take this green area, whatever area of IT&T that might be, such as software engineering - then we have a researcher in this university too, in this university, and one over here, and this research leader takes some responsibility for leading the research in that area. So you keep the capability across all the universities but you're concentrating the leadership. The leadership would amount to professional development and leading research grants. It involves organising meetings of these people and ensuring that there's some coordination between them.

You see in some cases you will have an area where it's a specialised area that's only within one of the universities, but in general you try to link up with people

in other universities because, for most areas of IT&T, you're going to want all the universities to be teaching in it and they will want some sort of capability. We had a consultant back in 1997, Prof John Hughes from the University of Technology in Sydney, and he refined this model and this is published in his report.

This has been working quite well in certain areas. It obviously depends very much on the capability of these people and their ability to do this kind of coordination, but in at least a couple of areas it's working extraordinarily well, and you're keeping a capability within the universities but then being able to concentrate the research to some extent. So it's an alternative to concentration versus dispersal or a way of making the dispersal work.

As was pointed out before, we certainly have to cope with that across Australia, the kind of country we are, with little pockets of population scattered across big distances, but even within a city like Adelaide where you have three universities, you still need to address it so that you keep each university able to maintain a capability and able to continue, particularly to teach, as well as do research across a broad range of areas.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月9日（星期二）

專題討論

研究－資訊及通訊技術

演講者

南澳福林德斯大學副校長（研究）

CHRIS MARLIN 教授

今天下午我想談談在澳洲進行的資訊和通訊技術相關研究，我將依照下列的項目，逐一討論。基本上，我會先講我們在澳洲所面對的一些挑戰，我想在台灣的情況也一樣，就是如何維持保有資訊通訊技術優勢的研究和教育，我想這兩者有連帶關係。所謂挑戰，通常是一般性的挑戰，尤其是如何吸引並且留住適任教師。

- 吸引並且留住適任教師：
在這方面我們有很多問題，待會兒我會說明現況，還有我們如何突破現有的困境。
- 鼓勵學生繼續唸博士班並且從事教學或研究的工作。
- 澳洲為加強研究工作所採行的方式：
有關生物技術的部分，上午已經講過一部份了，有一些是共通的，因為研判工作採行的方式很類似。
- 資訊通訊技術研究現況：強化澳洲優勢。
- 產學合作現況。
這是本學科中最根本的要項，這一科原本就是實務的學科，我們無法想像如果不和產業界合作會有什麼後果。
- 校際合作現況

我想引用昨晚李院長所講的「協力合作對競爭」評論，我認為這正是各大學和產業都同樣面對的問題，特別是正當目前吸引和留住教師面臨困難重重之際。先來看看我們在南澳所作的實例。

第一項挑戰是吸引和留住教師。我們可以用師生比例作為參考，最近一份報告顯示，橫跨資訊通訊技術的所有領域，特別是電腦科學，師生比已經由 14.6 比 1 升高到 27.5 比 1，其中原因並不是因為經費不足，而是要找到適任的師資相當困難。

我們看看電腦科學的情況，過去已經達到 27 比 1，這是目前資訊通訊技術的平均比例，而電腦科學本身現在已高達 51.5 比 1，這種驚人的比例剛講給其他學科的人聽的時候，大部分的人都不相信，但數字的會說話，對研究實力和校際間從事研究的學術能力而言，這是非常嚴重的問題。

這是個長期性的問題。80 年代初期，我在美國開始我的學術生涯，正確的說應該是 1980 年。我在 1988 年卸除 Flinders 電腦科學系主任職位時，發現橫跨全世界三個大陸，從來沒有哪個電腦科學系的教師是額滿的。在那段生涯中，我們隨時隨地都在徵求教師，永遠有空缺。凡是資訊通訊技術發展得不錯的國家情形都一樣，這一行要找教師太難了。後來，我們就找產業界一起來檢討這個問題，因為畢竟這也是產業的問題。

另一個相關問題是：我們要怎樣鼓勵學生繼續從事研究，尤其是持續進修博士呢？等一下，我會給各位看一些數字，這一學科的博士班學生人數和其他學科比起來實在低了些。我剛才提到的那份調查中也指出，從大學系所的角度來看，許多因素顯示，和其他的選擇比較之下，學術生涯對學生的吸引力不夠；而且研究生的收入和其他直接進入產業的同學相比實在差太多了，有天份的畢業生在產業界就可以賺得很豐厚的收入。此外，博士班進修的完成率可能也很低，不過，我們很難取得可靠的數據。

我們來看另一個狀況，我們可以依學科分類，比較大學部學生和研究生的人數比例。這些是澳洲 1993 年的數字，我們可以看出排比的結果。有關自然和物理的科學，研究生和大學部學生的人數比例約為 0.16，大約是百分之十六。這並不是學生總數的百分之十六，它真正的意思是大學部的學生當中會有 0.16 個成為研究生。

從這份排比中我們可以看出，在 1993 年，資訊技術排名居後，只稍微高過管理和商務。從比較新的數字，我們可以看到情形更加惡化，資訊技術現在是敬陪末座，對於大學部的學生來說，去唸資訊技術博士班就更沒有吸引力了。其他的排比都出現很類似的結果，雖然也有些變動，但並不顯著。結果是，資訊技術這個學科要找研究生很困難，但是要招收想進入業界賺大錢的大學部學生卻很容易。這不是澳洲獨有的問題，而且不用我說，這個問題勢將影響本學門，也會影響其執行研究的能力。

再來，講到重點研究所採行的方式，早上討論生物技術的時候已經談了一些；過去也已經嘗試過很多種方式，但都不成功。有一項早上沒提到的叫做「教學公司計畫」，這正是澳洲產業中，研究人員接受經費補助的所在，由政府和公司聯合出資鼓勵他們從事研究。但結果呢，至少在資訊技術和資訊通訊技術部門是這樣：經費用完的時候時，也就是遭受解僱的時候，產業界並沒有持續任用他們。這有點像種子活動，從某個方面來看，產業可藉此在其組織內設立研究人員，一旦經費用完了，產業就再更換另一項政府經費。當然並非全部都是這樣，對產業界的

研究也沒有造成太多的長遠影響。

另外有人提到「合作研究中心」計劃很成功，事實上，它雖然名聞國際，但可惜資訊通訊技術的合作研究中心並不多，要將他們分類有點難。雖然有幾所，但是比起別的學門是少得多，尤其和生物技術相比更是少得可憐。

欲獲得資訊通訊技術產業的支持也有許多困難，這不只是合作研究中心的問題，對於其他用途也是一樣。特別是像「合作研究中心」諸類計劃，評審應用的準則甚至要看產業夥伴投入的支持有多少，通常不會強過在別種產業所得到的支持。比方說，在礦產業中，往往產業夥伴對研究都非常投入，並且會指出其應用方式，採礦的工作通常是由澳洲公司執行。但在資訊通訊技術產業就不是那麼明確，不會明確指出要怎麼運用研究，而且公司常常是跨國公司，政府出錢給他們似乎也有點說不過去。這麼一來，要以「合作研究中心」計劃，鼓勵資訊通訊技術業從事研究，因而變得相當困難。

對此問題已經有了不少的反應，同時我們也在尋求替代之道。今天上午還提到政府設立特別國家中心的兩種領域，其中之一是資訊通訊技術。有一項程序正在進行，上個禮拜已經完成面談，目的就是為了設立資訊通訊技術的特別中心。本案經費很大，事實上比生物技術計畫多出許多，五年一億三千萬澳元，目標也很明確，即創立世界級的研究和研究訓練機構，以澳洲的力量，開創並運用資訊通訊技術，達到新的水準。諮詢小組將於五月向政府提出建議，之後就會發布相關事項。

這是個重大的發展，但也引發了我們今天上午關於生物技術的討論，以及該中心是否單一中心或是應該分佈配散。這個問題有很多答案，但基本上政府答案傾向集中，也許百分之七十的集中，而剩下的百分之三十則置於其他的一處或兩處。以上只是我自己對傳聞的解讀，絕非內幕消息或什麼的。但就我聽簡報所知，最多不過如此，這也可以給試圖解決那些問題的人一個有趣的模式。

談到生物技術時曾經指出，其構想是要增加其中的工作數量，所以研究訓練變得很重要，同時也要吸引一批海外的澳洲人回到澳洲來。從某個方面看，澳洲有個問題和台灣非常類似，特別是在資訊通訊技術方面，那就是我們有一大批澳洲訓練的研究者外流到美國或歐洲工作，如果我們能把那些人找回來，則我們在澳洲將有不得了的研究能力。我也是一拿到博士學位就離開澳洲的人之一，所以這也是我個人經驗之談。

此外，澳洲研究委員會已經公佈了四個主要領域，其中包括兩個相關聯的項

目：複合智慧系統和光子科技，大致上都屬於通訊技術。部長也公佈說下一次提撥經費的百分之三十三將以那四個領域為目標。由此可見，澳洲研究委員會的經費約有六分之一將用於四個領域中的這兩個，那也是不得了的事。其實政府正透過許多的方式試圖增加對資訊通訊技術的投資。

關於澳洲較有實力的領域，你可以用不同的方式來看。我所作的是挑出一些特別的中心以及實力所在的其他指標；你也可以用不同的方式看這個問題而且可能會得出不一樣的結果。

談到合作研究中心，有一所屬於企業分配系統，來自分配系統技術合作研究中心，其總部設在布里斯班。那是一所非常不錯的合作研究中心，對分配系統具有多年的經驗，這是澳洲實力較強的部分。另外有一所屬於衛星系統，就設在阿得雷德的南澳大學這裡；有非常多的大學參與了智慧網路技術。還有一所屬於技術啟動的資本市場，這是新的領域。有一所屬於感應信號資訊處理，也設在阿得雷德以及南澳大學的毛森湖校區。也有一所屬於遠距通訊，我想是設在伯斯。還有澳洲光子合作研究中心，該所的商业化非常成功，設在雪梨的澳洲技術園區。

在這張投影片上我挑了一些其他的活動，有點隨意挑的，想給各位參考，這些活動正要開始匯集成一股實力。在這些領域中有很多特別的研究中心，其中有一所屬於量子計算機技術，已經是國際知名了，據他們發佈的新聞宣稱其量子計算機技術為世界第一。我想世界上可能會有好些團體會同樣自稱為世界之首，但我認為他們必是名列前茅；那個領域也有人獲選為聯邦院士，這在澳洲可是了不起的大事。

在我的領域軟體工程方面，摩托羅拉澳洲軟體中心值得一提。摩托羅拉在澳洲的投資很大，主要基地在阿得雷德，我看那裡目前大概有四百位軟體工程師。三年前我在休假時曾在那裡待過六個月，對它蠻了解的，那裡有很多創新的工作正在進行，也有很多研究涉及軟體工程的各個不同領域。它們也在雪梨設點，那是下一個目標，目前他們也在伯斯設點，無論何處它們都和當地的大學有密切的聯繫，因而注入了各樣的構想。

但是很可惜，這也是我先前談到的另一個觀點，就是很多大學教師從大學轉行到摩托羅拉。我有一位博士班的學生就是這樣，她跟我作兼職博士研究，只相隔一天，她的薪水由講師級跳到教授級，這種事學校很難予以競爭。事實上，容我這麼說，因為摩托羅拉公司，我已經損失了兩、三位博士生了。他們很高興，畢竟唸了一半的博士訓練也還很管用，但是很可惜的是，對澳洲的整體研究人員而言，這種在某些方面有利的發展，卻有著相當不利的影響，至少對研究工作而

言是如此。

另一件事我要提的，因為我們正好目前位處的澳洲 mNet。澳洲在一兩年前有一套先進的網路計劃，有三項專案得到經費補助，其中極為重要的一項就是澳洲 mNet，將用以在北方高地發展最新的無線區域網路，我們現在正好在這個區域裡。當資訊技術世界大會在這條馬路的對面舉行的時候，就設有一套試用網路，大家配備了手持第三代行動通訊設備，提供旅遊以及其他的資訊。這在阿得雷德通用不過是一兩個月前的事，使用費很昂貴，所以我認為現在已經不再運轉了。如果要通訊也是下一階段的事，總之這是一項有趣的發展。我知道在其他的大學，說不定台灣也是，大家開始在討論「後 3G」的事。不過，現階段第三代行動通訊網路本身仍然無法確實的實施，當然其應用現在還不能讓人信服。

接著談談其他幾個我認為重要的議題。首先是和產業界的合作，這個題目我一直都有提到，對資訊通訊技術而言非常重要，但是我已經講過，其中隱含先天的危險性。澳洲的資訊通訊技術產業可以大概區分成兩種公司，二者有非常明顯的不同。第一種是澳洲本地的公司，通常規模比較小，有比較短程的目標，也比較沒有時間從事尖端的研究。他們不見得是像一般說的僅夠糊口，他們只是沒有足夠的能力參與大型研究計劃罷了。

另外一種是跨國公司，一般說來，他們的尖端研究不是在澳洲執行。摩托羅拉是個例外，我希望將來有更多的例外；但是過去的模式一直都是把研究室設在美國，這些公司裡的高手都是很早就被送到美國去，以方便參與。

我們在澳洲的做法是，找一些機制去推動並且找出和這兩種公司協力研究的機會。以我自己為例，我試著專注在第一種公司上面，因為我認為那才是希望所寄託的地方。如果我能參與那些公司並且告訴他們研究的可貴，那麼我想我們已經得到了更好的契機，在澳洲建立起有志於研究的長程產業。

還有一件事，很多資訊通訊技術公司是從大學的研究所發展出來的。例如，這條馬路對面舉行過的資訊技術世界大會，約有兩千位代表參加，其中有一段是澳洲政府主辦的比賽，叫做「發現澳洲資訊技術創新的秘密」，其內容就是普查澳洲，他們從一長串公司名單中把大約兩百五十家公司推到前面當作得獎候選人，而那串名單其實正代表了澳洲資訊技術創新的秘密。

如果你細看那份名單，有不少公司具有大學的淵源。我查閱名單挑出我所知道的或是可以輕易查到的，像 DSTC 公司來自昆士蘭的 DSTC 合作研究中心，南澳有三家，大概我比較熟悉南澳吧，不過我得承認南澳的名單比較長。還有

FourSticks 公司，我本來漏掉了這家，因為找不到網站。Your Amigo 公司來自 Flinders 大學，Maximine 國際公司和 Dspace 公司都來自南澳大學。至於通訊方面，新南威爾斯的 Redfern Polymer Technologies 公司也是由合作研究中心發展出來的例子。

我稍早說過，和產業界打交道以及和大學之間打交道有一件重要的問題，就是大家在合作或是在競爭，昨晚李遠哲院長在他的演講裡也講到這點。而我的演講裡，關於大學很難找到教師並且留住他們那一段講過，大學之間的合作非常重要。我們不要為了有限的資源而互相爭奪，反而應該讓人才在大學之間流通。我們必須找出可以合作的方式，並且創造強力的大學系統。

過去四、五年在南澳，我一直擔任指導委員會的主席，我們的做法是組成「資訊技術及遠距通訊南澳協會」，使南澳的三所大學在此就資訊技術和遠距通訊的教學和研究彼此合作。由於政府持續的經費支助，我們得以在大學間聘請更多資訊技術及遠距通訊領域的講座教授，成立產業顧問組，非常慎重其事，尋求跨州研究合作的特別模式。

最後，我要簡單的說明一下那個模式如何運作。不過在講解以前，我要指出幾個議題，你們大多數都很熟悉的，我們之前也已經談過，就是集中或是分散的問題。如果我們把研究能力集中，比方說，在資訊技術及遠距通訊的領域，讓我們設想它是軟體工程，也就是我的專長。如果我們把全部的軟體工程研究人員放在一個校區或一所大學裡面，那麼在其他的各大學內，請問要如何講授軟體工程？像我們在南澳開設資訊技術相關課程的至少就有八個大學校區。

你多半會想擁有又好又強的教師分佈在每一個地方，而你當然會想要有又好又強的教師講授資訊技術及遠距通訊，而且是在三所大學橫跨所有領域，這樣你可以照常教授資訊以及工程的學科。所以，我們所追求的模式是這樣的，在南澳我們有三所大學，簡稱它們 A, B, C，我們創立了研究節點，每一個研究節點有一位研究組長。這樣的結構對我們比較簡單，因為州政府給我們的錢是給某些教授的，所以基本上我們不必去留住我們的老教授，而新教授則擔任這些研究組長，一兩位現有的教授也可以擔任那個工作，其他的則不必作那個事。

然後呢，比如說你取這塊綠色的領域，可能是資訊技術及遠距通訊的任何領域，例如軟體工程，則我們在這所大學也會有研究人員，在這所大學，還有這所。這位研究組長負責帶領該領域的研究。那麼，你不但保持實力橫跨各大學，還可專注於領導。領導可以增強專業的發展還可獲得研究經費的補助。領導工作包括籌畫成員們的會議並確保他們之間的協調。

某些情況下你會發現，某個特殊的領域是某一所大學所獨有，但你通常會將它和其他大學的人連結在一起，因為對資訊技術及遠距通訊的大部分領域而言，你會希望所有的大學都能夠教授，而他們則希望能具有一些能力。1997 年我們曾有一位顧問，來自雪梨科技大學的 John Hughes 教授，他修訂了這個模式，並且發表在他的報告中。

在某些領域中這個模式的成效不錯，很顯然它是決定於這些人的專業本事以及他們從事這類協調的能力，但是至少有幾個領域是做得極為成功的。你可以在幾所大學之間維持你的實力，同時也可以專注於不同程度的研究。這是集中對分散的一個替代方式，或者是製造分散式工作的一種方法。

先前說過，我們當然要在全澳洲處理這些問題，像我們這種國家，地廣人稀，即使是阿得雷德這樣擁有三所大學的都市，你仍然要努力，這樣才能使每一所大學維持一定的實力，並且能在許多的領域中繼續教學和研究。

INFORMATION AND COMMUNICATION TECHNOLOGIES

C. Y. Chang

President
National Chiao Tung University

ABSTRACT

The past decade has witnessed the tremendous progress in the areas of information and communications technologies, especially in wireless communications and Internet. Taiwan was fortunate to have made some contribution to this worldwide evolution during this critical period. Statistics shows that the total revenue of Taiwan's information industry has surpassed 47 billion US dollars in the year 2000. This figure represented the world's third largest information industry output in that year. We also notice that the domestic communication industry is catching up quite rapidly.

In spite of our great effort and limited accomplishment in the above-mentioned areas, we had found a lot of deficiency and imperfectness that require new or amended policy on the part of the government. Having learned from this past experience and foreseeing the impacts of the WTO membership and the ever-heightening global competition, the government had launched several new programs since 1998, which I will present brief descriptions below.

The National Telecommunication Program Office (NTPO) was established in May 1998 to carry out National Telecommunication Development Program whose missions are (I) Enhancing the research coordination mechanism among Ministries and Councils, improving the effectiveness and efficiency of telecommunication research, (II) Training needed talents in telecommunication industry, (III) Developing key technologies for wireless communication and broadband Internet, (IV) Enhancing the national competitiveness for telecommunication service and manufacture and (V) Improving the quality of Internet, enhancing international research collaboration to achieve the NII goals. In the past three years, NTPO has granted dozens of proposals in both wireless communications and broadband networking. Along with local industries and research institutes, NTPO also created a task force to actively participate in international forums for next-generation (beyond the third generation, B3G) broadband wireless technologies.

Although there are more than 150 universities and four-year colleges in the country, very few of them enjoy an international reputation of academic excellence. The Ministry of Education (MOE) decided to break the tradition of allocating public university's budget according to their "sizes", awarding extra fund to those who have superior research performance. MOE initiated the Academic Excellence Program in 1999 and granted four proposals in telecommunications and information science more than 500 million NT dollars in April 2000. Last fall MOE selected nine "key" public universities and gave them 1 billion NT dollars to further improve their doctorate programs. A new initiative to encourage those key universities to strengthen their international collaboration efforts and to create new international graduate programs was announced recently.

Envisioning future trends in information, communications and related microelectronic technologies, we feel it is necessary for the domestic industries to migrate from manufacturing-oriented to innovation- and service-based and develop technologies with killer applications. To realize a successful transition, however, we must be able to meet the large manpower demand of these industries that already have a serious manpower shortage problem. As a result, the Administrative Yuan approved the National Si-Soft Project and authorized the MOE to distribute 85 new faculty positions amongst major universities so that those new recruits can help sharing the increased loading of teaching and researches. The policy of making available additional faculty positions will continue for at least three years.

LIFELONG LEARNING – AN AUSTRALIAN PERSPECTIVE

Paper to Australia Taiwan Conference on Higher Education

Ruth Dunkin
RMIT University

Professor Ruth Dunkin is Vice-Chancellor and President of RMIT University. She held several roles within the Victorian State Government before joining RMIT in 1989.

ABSTRACT

'Lifelong learning' is a term that has a new urgency but is characterised by many definitions. International bodies, such as UNESCO and the OECD, advocate the adoption of a comprehensive set of lifelong learning goals incorporating economic, social; and personal development goals. They warn that policies framed purely in economic terms are too narrow and jeopardise the range of public benefits that flow from a definition incorporating all three aspects.

However, each country pursues lifelong learning in the context of its particular historical, cultural, social and economic circumstances. This leads to different emphasis being given to each of the three dimensions identified. Yet the imperatives of an increasingly globalised economy are driving convergence in public policy approaches, with economic aspects assuming primacy.

Critics suggest that the realisation of lifelong learning in all its aspects and for all is as yet an empty rhetoric. In part they suggest this results from the ways in which the economic aspects dominate and partly it arises from the lack of understanding about the radical reorientation that the adoption of such a concept requires of governments, organisations and individuals. It is also the case that as for every other public policy issue there are differing views about the role of government in providing or supporting lifelong learning.

In Australia, government initiatives have been directed to increasing educational attainment levels through encouraging school retention rates, increasing participation in tertiary education, providing alternative pathways for school-leavers through the introduction of traineeships. In relation to supply of educational and training services, government has sought to encourage responsiveness to emerging demand from the existing public institutions by exposing them to competition and through the introduction of fees for students. Reforms within the National Training Agenda within the VET sector has been a demand that work and formal training become more closely related, both in terms of the content and location of training. Most recent initiatives, particularly by State governments, have seen particular attention paid to simplifying and streamlining the pathways for students through the various sectors and levels of education. Collectively these initiatives might be seen to be preparing the ground for lifelong learning by increasing the base of people who access education for longer and slowly reorienting the institutional infrastructure to ongoing education and training, incorporating both formal and informal aspects. The orientation and imperative underpinning these initiatives tends to be economic.



**TRANSCRIPT
OF PROCEEDINGS**

SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

FOCUS SESSION:

TEACHING AND LEARNING - LIFELONG LEARNING

SPEAKER:

PROF RUTH DUNKIN

VICE-CHANCELLOR

RMIT UNIVERSITY

PROF DUNKIN: What I wanted to do today was just to briefly go over the definitions of lifelong learning that I am using, to highlight the fact that these definitions vary significantly amongst countries, and to provide some background on the Australian perspective.

Lifelong learning - a definition. I think that most of the definitions that we come across suggest that it's continuous learning by individuals over their lifetime. It's a concept that involves both formal and informal learning and there are usually three dimensions or aspects of lifelong learning that are relevant. There is an economic aspect, which relates to work-related skills and knowledge. There is a social aspect, which relates to learning in order to allow effective participation as a citizen. And there is the personal development and enrichment aspect, that perhaps is the most traditional and age-old.

International bodies, particularly the OECD and UNESCO, have adopted in 1996 an ideal goal, which is that balanced and holistic learning for all occurs across all of those three dimensions of lifelong learning, and they suggest that a government will ignore any aspect at its peril. As a result of the goals being issued by the OECD and UNESCO, most countries have got that ideal or goal adopted in their policy statements. However, many scholars of lifelong learning suggest that there's more rhetoric there than there is reality.

In fact, when we look, it's like any concept. It's one that is operationalised and put into practice in very different ways, according to the cultures and the histories in which it's operationalised, and so different countries with different histories and cultures and different valuation of education will emphasise those three aspects in different sorts of ways. It's also operationalised in ways that reflect what are the different current social, political and economic challenges before each of the countries.

The OECD has characterised the Australian version of lifelong learning as one that tends to emphasise the economic, but what we find when we look internationally is that there is, in fact, a convergence amongst public policy, that that emphasis on the economic dimension is one that's becoming increasingly important for all countries as a result of the impact of the knowledge economy; that there has been a multiplicity of pathways developed in order to encourage lifelong learning, and most recently, having got multiple pathways established, then policy initiatives that are designed to simplify those pathways and make it easier for learners to find their way through them.

One of the writers, Hassan, in the literature talks about there being four features that can be seen internationally that are characteristics of lifelong learning. The first of these is the centrality of the learner and a policy focus on articulation of demand, and in Australia that comes through as "student as consumer". The second feature relates to the focus on learning to learn and particularly, recently, the evolution of self-directed learning in the ways that we heard Bruce King talk about this morning. The third feature is the one that incorporates both the informal and the formal learning that I talked about at the beginning, that it's learning in all settings, and again all public policy is tending

to try and bring a convergence of learning at work and within formal institution. The fourth feature, of course, is that it occurs over a person's lifetime.

Lifelong learning. Is it something that is radically new? Does it require a radical reorientation of education and training policy within countries? I guess I am suggesting in this paper that it does, that there is a significant change that's required in order to move from an up-front initial investment in education to continuous education over a person's lifetime and that this requires quite different thinking from not only the individuals and families who are participating in it but also from institutions such as ours, from employers and from governments.

In Australia, lifelong learning, in terms of its formal part, occurs across four different sectors: schools, vocational education and training, higher education and the adult and community education. While we have a mix of both public and private institutions in the first three sectors, what's notable is that the fourth sector is primarily community based providers.

Australian policy has been driven by a limited number of goals or drivers, the first of which is educational attainment, trying to increase the level of educational attainment across the population generally, as a basis for improving Australia's international competitiveness. Therefore, government initiatives have gone into improvement of basic literacy and numeracy, into improving school retention rates and, of course, then to providing expanded access to post-school education through both higher education and the VET sector.

A major concern over the last 15 years which has driven these policy initiatives has been the high levels of youth unemployment in Australia. That concern has also driven the development of alternative pathways and, in particular, the establishment of traineeships.

Policy has also been driven by a desire to improve the relevance of formal education and training. The national training reforms which affect the VET sector rather than higher education are particularly relevant here, but we have also within higher education seen increased focus on the employability and the generic skills of higher education graduates.

In relation to adults and work, the government policy stance has tended to be one around user pays or the employer pays. It's deemed that this form of education at this stage tends to be something that's of private benefit primarily and therefore will be paid for by the individuals who benefit. As a result, we have seen the introduction of postgraduate fee-paying as the primary mode within higher education for adults in work.

Another driver to the policy has been to try and improve the responsiveness of institutions to the emerging demands for lifelong learning through competition, and that's both in relation to the relevance of the programs, to the cost-effectiveness of those programs and in terms of recognition of prior

learning, which is about trying to ensure that learning is only done once, and that prior learning might have occurred in other educational institutions or it might have occurred in workplaces.

In summary, then, we might say that the Australian policy on lifelong learning has been very much one around preparing the ground, ensuring that the general level of education is increased as broadly across the population as possible in preparation for a more developed lifelong learning engagement later on.

The result of those initiatives has been, despite the introduction of fees in relation to particularly postgraduate coursework programs, that there has been a significant increase in participation in lifelong learning. Between 1981 and 1999 the level of enrolments within higher education generally grew two and a half times but, within that growth, postgraduate coursework and research completions increased from 19 per cent of the total of higher education completions to 31 per cent, and the most significant category of growth has been in postgraduate masters programs.

At the same time, enrolments in the VET sector have grown 75 per cent, so again a major expansion, and while again the initiatives from government have tended to focus on school leavers and there's clearly a large growth within school leavers participating in VET, we have also seen significant annual growth in the later years. In the 40 to 49-year-olds we see a 9 per cent per annum growth; 50 to 59, 15 per cent; and 60 to 64, 16 per cent. And it's worth noting that there are a range of leisure programs or general education programs that are provided within this sector, as well as work-related skills. The third sector that I talked about, the adult and community education, is growing as well, but reasonably limited numbers of people: 220,000 enrolments in 1999.

So, while there's been significant growth in what we might deem to be formal lifelong learning, we are still seeing the pattern of provision within Australia being predominantly focused on that up-front investment by school leavers as they either enter the workforce or prior to them entering the workforce. In 1999, we see that 56 per cent of those who are in formal education institutions are in work, which reflects the increasing level of fees that are payable, but only 13½ per cent of those who are in work are actually in education and, surprisingly, only 20 per cent of those who are unemployed are in education, and that's despite the fact that we have had some targeted labour market programs which have related to training skills in that period.

We also note that, of those who are engaging in formal lifelong learning, the more educated you are the more likely you are to re-enrol in some other form of education. It may not be in higher education; it may well be that a university graduate will go to the VET sector for specific skills improvement.

Of interest or concern is what's happening amongst the 25 to 34-year-olds. You will remember that it's not one of the age groups that was experiencing as quick a growth as some of the others, and in fact some of the latest statistics that have been taken out show that this age group is experiencing less financial

security than those who had gone before them, as a result of changes in the labour market and more independent contracting, self-management of careers, and yet they still face the significant competing investments for their time and for their dollars both in terms of acquisition of housing and investment in their children's education.

What that's doing is tending to fuel new sorts of providers and there's certainly a growing interest amongst that age group in the new modes of provision - in distance education, as Bruce talked about this morning - and the Open Learning Agency, which is the Open University of Australia, which delivers in traditional distance and, increasingly, online education, is finding that enrolments in this particular age group are their fastest-growing enrolment segment.

So, in conclusion, Australia's version of lifelong learning is very much dominated by the economic dimension. The policies have been, as I have said before, about raising the general levels of educational attainment across as broad a spectrum of the population as possible but focusing still amongst the young. It's been on the development of multiple pathways for school leavers as a particular response to the youth unemployment issues, and everywhere we have seen a focus on trying to simplify those pathways, as has occurred internationally in the last 12 to 18 months.

Those policies have increased access, as I have indicated, significantly and have increased the overall attainment levels of the Australian population. That shows through quite clearly in the OECD figures. But the increases in adults participating are still marginal in absolute numbers, despite the growth figures that are showing through. In other words, we're starting from a very low base. And while the increase in enrolments in higher education is quite clearly responses of individuals to the changing nature of the job market or the labour market, the increases and enrolments in the VET sector may not be quite so economically determined. The growth particularly in the 60 to 64-year-olds of 16 per cent, I suspect, is more about the leisure and post-workforce activities than job related.

I guess we can also conclude, by looking at the ways in which the offerings and programs of institutions have changed over that 15-year period, that institutions are slowly responding to the competitive environment and they are adjusting their provision.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月9日（星期二）

專題討論

教與學—終身學習

演講者

墨爾本皇家科技大學校長

RUTH DUNKIN 教授

今天，我主要是把我對終身學習的定義做個簡扼的說明，以突顯各國對終身學習的定義有多大的差別，並提供澳洲人對這方面看法的一些背景。

何謂終身學習？我想我們所接觸的大多數定義都說明這是一個人終其一生的持續學習。它包含正式與非正式的學習，通常與三個層面相關。一是經濟層面，學習與工作相關的技術與知識；二是社會層面，學習是為了參與社會，成為有價值的公民；三是個人發展與充實層面，這可能是最為傳統、歷史悠久的定義。

一些國際性的機構，特別是「經濟合作發展組織」和「聯合國教育科學暨文化組織」，已於 1996 年設定一個理想目標，亦即要平衡與統合終身學習的三個層面；它們表示，政府會忽略其中任何可能必須承擔風險的層面。經濟合作發展組織和聯合國教科文組織發佈這個目標之後，大多數國家都將此一理念或目標融入它們政策的制定上。然而，許多終身學習的學者認為，那只是咬文嚼字，實質的意義並不大。

事實上，假若我們仔細觀察，它就像任何觀念一樣。根據實施所在地的文化歷史，它的運作和實施方式會有顯著的不同，因此，歷史、文化和教育價值觀不同的國家，強調這三個層面的方式也會不同。它的運作情形也反映了各個國家當時面對的社會、政治和經濟等層面的挑戰。

根據經濟合作發展組織的看法，澳洲版的終身學習傾向於強調經濟層面。但如果放眼世界，我們會發現，事實上公共政策正逐漸在統合中。因為知識經濟的影響，對所有國家來說，強調終身學習的經濟層面愈來愈重要。為了鼓勵終身學習，所有國家紛紛發展不同管道。最近，多元途徑已經建立，並且以政策倡導簡化這些管道，使終身學習者能夠更容易地學習。

Hassan 是一位研究終身學習的學者。在他著作中，他談到有四個放諸四海皆準的特徵，可以做為終身學習的特性。第一個特徵是以學習者為中心，並且提倡表達自己的需求；在澳洲，就是「以學生為顧客」。第二個特徵是強調為學而學。誠如今天早上 Bruce King 教授所說的，特別是最近自我引導學習的革新。第三個特徵就是我一開始所說的正式與非正式學習的合併，各種環境中的學習及所有公共政策的制定，都為了要將工作場所和正規機構的學習結合起來。第四個特徵，當然就是它應該涵蓋個人的一生。

終身學習，它是個嶄新的產物嗎？它需要大幅地重新調整國家的教育機制和訓練政策嗎？我想答案是肯定的。為了從教育的預付型態投資，轉變為個人的終身長期教育，需要很大的改變。它需要不同的思維方式，不只對個人或家庭來說如此；對於像我們的機構、或雇主、政府來說，也是如此。

在澳洲，就正式教育而言，終身學習有四個不同階段：學校、技職教育訓練、高等教育、成人與社區教育。前三個階段，我們都有公立與私立機構。值得

注意的是，第四個階段主要是以社區為提供的單位。

推動澳洲政策的目標或動機很有限。第一個推動力是為獲得教育。為了提升一般人口的教育水準，以作為加強澳洲國際競爭力的基礎。因此，政府政策積極推動基本的讀寫能力與數學計算能力的加強、就學率的改善；另外，當然也藉由高等教育及技職教育和訓練，提供更廣泛的進修教育管道。

澳洲青年失業率的偏高，也是過去十五年來不斷推動政策制定者的主要考量。這樣的考量推動了多元化途徑的發展，特別是學徒制度的建立。

此外，為了改善相關的正統教育與訓練，同時也加速推動政策的執行。國家訓練改革與這點特別有關；它對技職教育及訓練的影響比對高等教育的影響來的大；但我們也看到，高等教育越來越強調畢業生的工作能力和一般技術的培育。

至於成人與工作，政府政策立場傾向於使用者付費或雇主付費。一般認為，在此一階段的教育形式牽涉到私人利益，因此該由獲利的個人付費。結果，我們看到研究所付費課程成為在職成人的高等教育主要型態。

這個政策的另一個推動因素是，藉由競爭，提升各機構對終身學習的興趣。因為一般人對終身學習的需求越來越明顯。這與課程的適合程度有關，也與它的成本高效益有關。這關係著課程是否能延續以前所學；它是為了確保該學習能一次完成，而先前的學習可能是在教育機構或在工作場所獲得。

總之，我們可以說澳洲的終身學習政策是為了打穩地基，以使一般教育水準盡可能廣及所有人口，好為往後的終身學習計畫之發展做準備。

儘管學士後的課程學費需自付，政府獎勵終身學習已有顯著的效果。1981 年到 1999 年間，高等教育的入學率大約成長兩倍半。以課程為主的研究所和以研究為主的研究所學生，其完成率從原先的 19% 提高到 31%。最明顯的成長項目是研究所的碩士課程。

同時，職業教育及訓練課程的入學率成長了 75%，這又是一大進展；政府的政策是將重點放在已經離校者。我們的確看到離校者參與再進修課程的比例大幅增加，我們也看到近幾年來的年成長率也增加許多。年齡四十至四十九歲的人口當中，有 9% 的年成長率；五十至五十九歲則有 15%；六十至六十四歲的成長率為 16%。值得注意的是，有許多終身學習的課程是屬於休閒課程或非專業教育課程。此外也有與工作相關的技術課程。我所說的第三部分，也就是成人與社區教育，也不斷成長中，但成長的人數有限，1999 年共有 220,000 人註冊。

因此，即使我們認為正式的終身學習已有大幅成長，我們仍然看到，已經離校者仍認為終身學習只是進入社會工作時或之前的前置投資。1999 年，我們發現

在就學人口中，有 56% 的人是在職中，以應付學費的負擔；可是在職人口中卻只有 13.5% 在進修學習；而且令人很驚訝的是，儘管我們當時已有一些專門為勞動力市場所設計與訓練技巧有關的課程，但只有 20% 失業者接受相關訓練。

我們也注意到，從事正式終身學習的人當中，教育水準愈高的人，愈有可能再接受其他形式的教育。不盡然是高等教育，也許是大學畢業生為了提升某種特定技能，而接受職業教育和訓練。

25 到 34 歲的人的情況值得注意。這個年齡層的再進修教育人數並不像其他年齡層有大幅的成長比例。事實上，一些最近的統計資料顯示，由於勞動市場改變，這年齡層比起他們上一代有更多的自由工作以及自我規劃生涯的情況，他們的經濟安全感因而較低；然而，為了成為有屋階級以及子女教育的投資，他們仍要面對時間投資與金錢投資上的激烈競爭。

目前所做的傾向於鼓勵更新的學習提供管道。在這個年齡層中，有一個新的型態逐漸引起更多的興趣，那當然就是遠距教學。此點 Bruce King 教授今天早上已經提過。還有就是開放學習代理機構，亦即「澳洲開放大學」，它以傳統遠距教學的方式，並且逐漸增加網路教學，這個年齡層的入學者正是成長最迅速的族群。

總結來說，澳洲版的終身學習定義受到經濟層面的影響很大。如我之前所說，政府的決策是要提升更多廣大群眾的一般教育水準，但仍以年輕人為主。對已離校者來說，發展多元化的管道，可以因應青年失業率的問題。而到處我們都可看到這些管道不斷嘗試去簡化，正如過去這 12 到 18 個月裏國際上共同的趨勢。

如我先前所言，這些政策大幅的增加教育管道，已擴及澳洲人口的整體教育水準。這一點從「經濟合作發展組織」的數據可以明顯看出。但是儘管數字也在成長，成人參與的程度仍屬稀少。換句話說，我們仍有很大進步的空間。而高等教育入學人數的增加，明顯反映出個人對不斷變動的職場或勞動力市場的因應方式；至於職業教育及訓練教育入學人數的增加，並不那麼明顯的受到經濟因素所支配。60 到 64 歲註冊人數成長 16%，我推測，它和休閒活動或退休後活動較有關，而和工作關係並不那麼大。

看看這十五年來各機構的提供課程逐漸改變，我想我們可以下結論說，各機構正在慢慢因應這競爭激烈的環境，調整腳步，因事制宜。

PROMOTING STRATEGIES OF LIFELONG LEARNING IN HIGHER EDUCATION IN THE REPUBLIC OF CHINA ON TAIWAN

Prof. Kuo-shih Yang

President, National Chiayi University

ABSTRACT

Lifelong learning started to become popular since three decades ago when the United Nations Educational, Scientific and Cultural Organization (UNESCO) promoted it as the major strategy for building a learning society. The development of the knowledge-based economy has contributed a great deal to its further progress. In Taiwan, the government did not stress it until 1980 when the Social Education Law was passed and enforced. Thereafter, lifelong learning gradually gains its ground in Taiwan's educational system, and reached a peak in 1998 when the government designated that year as the Lifelong Learning Year of Taiwan, and published a white paper called "Towards a Learning Society."

However, despite these efforts made by the government, lifelong learning is still under developed in Taiwan, especially at the level of higher education. Although the quantity of adults who return to the educational system has increased yearly, the quality of lifelong education did not make commensurate progress, and this has seriously obstructed our nation from excelling in the global competition. To address this problem, the government, in the short run, should further promulgate adult education, initiate more lifelong learning programs, pass lifelong learning law, establish and strengthen the recurrent education system, and improve the adult education curricula and teaching methods; in the mid-range proposal, the Government should encourage universities to adopt open-door policies, and to implement a leave-taking system for working students.

Our goal is not only to survive in the fierce global competition, but also to make learning an integral part of every citizen's life. This goal can be actualized only when the government implements both the short-term and long-range strategies proposed previously.

Foreword

The twenty-first century witnesses the advent of knowledge-based economy and intense international competition. Higher Education is the fountainhead for continual national development and competitiveness. With the rapid social changes, democratization of government, swift economic growth, structural shifts in production, and the proliferation of value systems in recent years, the maintenance and function of higher education as well as its position of leadership face serious challenges. In order to meet the demands of a pluralistic society, higher education must make new breakthroughs, effect adjustments and planning with vision and foresight to seek improvement and development, and open new frontiers toward becoming a modernized nation of the twenty-first century.

Lifelong learning has gradually become the mainstream of educational development in Taiwan. Lifelong learning first became popular three decades ago when the concept was actively promoted by the United Nations Educational, Scientific and Cultural Organization (UNESCO). The promotion has had great impact on educational development not only in advanced countries but also on newly developed countries, such as Taiwan. In 1972, the Report on Education Plan, with a theme of "complete fulfillment of the person," was published by UNESCO's International Commission on the Development of Education, chaired by Edgar Faure. In the report, lifelong education was considered the main direction and strategy for future reform in education and for developing a learning society. Later in 1976, the Lifelong Learning Act was formulated and promulgated in the United States, followed in Japan by the 1990 Lifelong Learning Promotion Law. In European Union (EU), the year 1996 was also celebrated as the European Year of Lifelong Learning, which was supplemented by the EU-published *Teaching and Learning—Towards the Learning Society*. All of this showed that lifelong learning has received great attention in advanced countries and will become the world's mainstream of educational development in the future.

In recent years, with the initiative and promotion of the academics, lifelong learning has gradually drawn wide attention in Taiwan. The Social Education Law promulgated in October 1980 particularly emphasized "the aim of implementing national and lifelong education." At the Sixth National Conference on Education, convened by the Ministry of Education (MOE) in February 1988, a Development Plan for Social Education was discussed and approved. In this plan, one of the most important policies on education was to establish adult educational system and achieve the goal of national and lifelong education. At the seventh conference convened in June 1994, the focus was on the promotion of lifelong education as the vision for educational development in Taiwan. In February 1995, the Ministry of Education, for the first time, published *the Report on Education of Republic of China: Towards an Educational Vision for the 21st Century*. One of the foresighted entries under Chapter 7 of the Report—Major Issues and Development Strategy for Social Education—was to "plan a career learning system and establish a lifelong learning society." Concrete recommendations were also provided in *the General Recommendation for Educational Reform*, which was presented by the Committee on Education Reform of the Executive Yuan. These include deregulation of education, care for every student, expansion of admission channels, enhancement of educational quality and establishment of a learning society. These recommendations for education reforms are based on the cores of the General Advisory Report—promoting lifelong education, enhancement of a learning society and carrying out education reforms in schools. In response, the MOE, in order to publicize the concept of lifelong education and establish a learning society, designated 1998 as the Lifelong Learning Year of Taiwan, which was supplemented by the Ministry of Education-published white paper entitled "Towards a Learning Society."

Policy and Goal

Education in Taiwan has become more diversified as it continues to move toward democracy, economic growth and social progress. The need to receive education is also growing as a consequence of rapid social shifts, information explosion, ever-changing nature of science and technology, affluent well-beings and more leisure time enjoyed by the people. In order to make Taiwan more competitive internationally, authorities provide lifelong learning opportunities to upgrade people's education level and enhance living and vocational skills. This has become an important issue in education development.

To that end, the MOE has been promoting lifelong learning in a well-planned, comprehensive, and holistic manner, and the drafting of the "Medium-term Plan for Promoting Lifelong Education and Establishing a Learning Society", approved at the 5th meeting of Promotion Group for Education Reforms, is the first prominent result. The main objective of this plan is to cultivate well-rounded character in the individual so as to promote individual growth, social harmony and national development. Concrete objectives of the plan are outlined as follows:

1. Fostering the Concept of Lifelong Learning among People

The key to establish a learning society is to cultivate the concept of lifelong learning among the general population. This will be initiated at the elementary level so that the new generation can form the habit of continual learning and make learning part of their living, that is, part of life itself. On the other hand, education authorities will support lifelong learning activities to establish a learning society and make learning an important part of daily lives.

2. Offering More Opportunities for Lifelong Learning

Efforts should be made by the public and private sectors to take full advantage of all education resources available and provide diversified and multi-channel learning opportunities. In addition to regular daytime programs, schools should also offer opportunities for adults to study during evenings and weekend. Furthermore, institutions responsible for adult education should encourage public participation in education by arranging seminars, symposia, site visits and exhibits.

3. Supplementing Reforms of School Education

In accordance with the concept of lifelong learning, the objective of school education should be adjusted as a means to cultivate students' self-learning ability and enable them to discover and solve problems. The contents of curricula must also be modified to allow full exchanges with the community. This would make education more vivid and creative for fostering students' practical ability.

4. Establishing a Recurrent Education System

In order to provide opportunity for adults to continue learning, the following approaches can be considered: offering more learning opportunities, improving institutions of higher education, reviewing middle schools' admission requirements, adopting flexible and diversified admission processes, and replacing entrance examinations with application process that takes working experience and achievements into consideration.

5. Establishing Complete System of Lifelong Education

The current educational system, either formal or informal, should be highly flexible. Learning activities offered in formal education and informal organizations, as well as knowledge and skills informally acquired from daily life, must be coordinated and integrated. This would encourage public participation in constructing channels for various exchanges, in opening up the currently closed system, and in strengthening exchanges and coordination.

Problems in Taiwan's Higher Education Today

In retrospect, Taiwan's higher education has evolved from elitist education to universal education, from stressing economic reconstruction to encouraging distinct educational functions, from a job-training perspective to a consumerist perspective, from a government-directed approach to self-directed approach, from a monolithic paradigm to a multi-faceted paradigm, and from once-in-a lifetime education toward lifelong learning. In this way, higher education has, in keeping with tides of the time, undergone many changes to satisfy social needs. Now facing unprecedented challenges and transformation, higher education needs new modes of thinking, new systems of management, and new cultural values to arrive at a new university culture in order to effectively serve the functions of higher education.

Higher education is an important ingredient for precipitating social change and leading society to new directions. In democratized higher education and under the pressure of globalization, traditional modes of elitism no longer serve the needs of our pluralistic society, and we must move toward life-long learning and thoroughly reconsider holistic educational system. In response to social changes and needs for lifelong education, the structure and form of higher education are becoming more universal, more open, and more oriented to pluralism and to adult education.

The goal and responsibility of today's government are to prepare for the advent of a knowledge-based economy by strengthening the quality of our graduates and by raising our national competitiveness. Living in such a fast-changing age, each person must become a life-learner to keep up with the time by acquiring new knowledge and skills, lest he or she should be left behind by swift social transformations. Therefore higher education must provide opportunities for adults to return to school and acquire new knowledge. We must encourage the population to seek for continuous growth and thereby raise the level of life-quality for the entire population, and facilitate societal survival and national development.

Lifelong learning is a clear trend in the world's advanced nations. Its ultimate goal is to establish a lifelong learning society. Facing the demands of a prosperous society, higher education in Taiwan has been quick to expand its services to provide the growing adult population with greater opportunities for higher education. In the 1980s two open universities were launched in the north and south of Taiwan to meet the needs of those already in the workforce, providing them with the opportunity to advance to higher education level. At the same time, all universities and colleges have shifted from an elitist education toward a general education that offers all kinds of non-credential adult education courses in order to benefit local populations.

After more than ten years' development, the movement toward further education in universities has become part of the learning system which enables adults to return to higher education. These paths include open universities, adult education courses toward bachelor's and master's degrees, two-year polytechnic programs for members of the workforce, vacancies for transfer students in universities, and all sorts of extension programs provided by institutions of education.

Aside from this, the regulations for community colleges have already been submitted to Legislative Yuan for ratification. If these can soon become laws, the wide-ranging implementation of community colleges will provide many more pathways for learning at levels above junior colleges. College education will be more diversified, popular, accessible and practical than ever, joining higher education

with basic education that more closely meets the needs of the people. It will also bring to fruition our goal for adult education—all citizens are entitled to the most effective education during any phase of their lives.

Now the pathways and levels of higher education in extension programs are already quite copious, and students are yearly on the increase. However, institutions of higher education in general still lack proper awareness and are without proper quality control. The extension education is mostly considered “informal,” causing a glaring imbalance in quality of education. On the whole, national institutions with greater shares of the funding, unfortunately, participate less in such undertakings while private colleges, despite already overcrowded classrooms, and high teacher-student ratio, are recruiting extension students far beyond their capacities.

Teaching, research, and public service are the main missions and functions of universities and colleges. Since knowledge remains the most important element in societal and economic growth, universities had been passing on knowledge in the early period to the end of the 19th century. In the mid-20th century when knowledge or application of knowledge was stressed, universities continued to stress teaching and research. However, following the advent of the learning society, opportunities for higher learning accordingly became available to adults, which further highlighted the importance of higher education in the society.

We are now facing a host of serious problems in imbalance due to the shifts in economy, production, and in the sociocultural and political spheres, problems that need better-educated and wiser population to solve. One of the major methods for solution is to provide more opportunities for higher education to spur greater social development. But our universities either lack proper modern perspectives or are still mired in traditional methods of operation, and consequently the design and offering of curricula still fail to meet our needs, and institutions remain unable to fulfill their functions. To meet the needs of a learning society, university extension services must conduct serious reassessment and self-examination. Our universities still lack correct understanding of public service, and must change their passive attitude toward social service. At the same time, universities must seriously explore ways and means of cooperation with other educational agencies, industrial and commercial institutions and governmental departments. At the same time we must become more familiar with the future learning society so that universities can better adopt more suitable policies and adjust their pace so as to maintain a leadership role in promoting social progress and development.

Strategy of Implementation

In Taiwan, the efforts to promote lifelong education and establish a learning society are based on our education principles, the vision for national reconstruction, the shift of social development, the learning needs of the public, and the trend of world development. The learning environment and process should also be taken into account. Facing the approaching tide of lifelong learning in a learning society, universities must take strategic measures to ensure continuing survival and development. Strategies for development include at least the following:

1. Appropriate expansion of avenues toward on-the-job training. Following the global advent of the age of knowledge-based economy, we should daily stress the development of cutting-edge, frontline science and technology and the raising of academic standards to ensure our nation's competitiveness. For this reason it is vital to encourage universities to increase on-the-job training opportunities in order to satisfy the need of advanced personnel. In practice, it is helpful, firstly, to increase graduate institutes to a proper degree, admit a certain number of on-the-job students to the graduate programs in some specialized areas; secondly, to increase the number of two-year specialized on-the-job vocational programs for junior college graduates; and finally, to increase the number of accredited courses in the extension programs of all universities to meet the needs of those already in the workforce.
2. Establish certification mechanisms. In 1996 the Committee on Education Reform of the Executive Yuan brought out *the General Recommendations for Educational Reform* clearly planning for lifelong learning society, indicating also the establishment of a mechanism for certifying self-learning achievements, and for acknowledging individual efforts in studies. The Ministry of Education in 1998 also made public its white paper "*Toward a Learning Society*" that set the direction toward acknowledging the learning achievements of all people. To implement the recognition of extramural education achievements, the government should set forth principles for acknowledgement, amend the University Law and the Degree Awarding Law

in order to establish a legal basis. During this process, it should implement and supervise quality control and coordination. Next, with respect to the certification mechanisms, the government should establish a dedicated agency for this task by entrusting a highly respected academic group to carry on the work of certification process planning, so as to provide guidelines for higher education institutions in certifying extramural-learning achievement.

3. Encourage institutions of higher learning to offer adult education.
Universities should strengthen mechanisms for the selection and recommendation of on-the-job students returning to school, for obtaining degrees, certifications or grades, and offer additional chances for adult or extension education. At the same time, universities should change their admissions policies and the structure of student-organizations in order to increase the numbers of adults returning to school. Especially in need of swift implementation is the system of accreditation and transfers for recognition and equivalency. Such a system will increase flexibility in adult education, and help adults in learning. Finally, in order to activate adult or extension education, we should set out with all due speed the system of on-the-job studies for adults in the workforce. This can be achieved through legislation, or through negotiation between employers and unions. We should also establish procedures for prizes and awards to promote the willingness on the part of national institutions to offer adult education.
4. Fortify social service, carry out regional learning environments. Regional districts are where our public conduct their living and leisure activities, being where they live. To promote regional studies will not only enhance recognition by the district study groups in their region but also improve the environment of regional study. In particular, through implementation of extension or adult education, universities will become an important fulcrum for lifelong learning programs, offering diverse open curricula, satisfying different needs of the region's citizens. At the same time, to speed up social growth, productive relationships between educational institutions and industry should be established with a sharing of resources.

Prospect for the Future

To embrace the age of knowledge-based economy, to strengthen the quality of our workforce and to raise our national competitiveness, each of us must become a lifelong learner. In particular, returning to school in adulthood has already become the fervent expectation of the public at large. For this reason, universities have the responsibility to provide opportunities in adult education to enable adults to grow and to elevate our living standards as a whole.

Short-term Proposals

1. Enhance adult education, organize extension education and on-the-job training in special areas, provide members in the workforce with means to re-enter the education stream and meet the needs of lifelong learning.
2. Create new types of educational structures for offering regional adult education programs and extension courses.
3. Induce legislature to complete with the greatest possible speed the articles on community colleges and extension programs to be implemented at the regional and district levels, and to finalize the third-reading process, which will make it a law.
4. Establish the recurrent education system. The Third Education Superhighway can be built by increasing the quota of in-service education and offering more extension programs for adult learners in colleges and universities.
5. Improve curricula, teaching materials and methods of teaching for adult education. The vision of lifelong education can be realized by strengthening professional knowledge and skills for teachers of adult education and improving curricula, teaching materials and methods of teaching for adult education.

Mid-range Proposals

1. Universities are to adopt open-door policy, to adopt more flexible entrance criteria for adult students, and to change admission policies, e.g., following the "Regulation 25/4" policy at present being activated by the Government of Sweden. According to this regulation, any adult above the

age of 25 with no less than four years' work-experiences who meets certain established standards in linguistic and mathematics ability, is eligible for adult education.

2. Implement a leave-taking system for on-the-job students to return to school, either by means of legislation or by negotiations with employers and unions.

Conclusion

Looking ahead to future developments in our higher education we shall be facing major changes whether in educational principles, modes of operation, in systemic changes or in curricula renewal, and we may meet unprecedented challenges and transformations. As institutions become pluralistic, liberal, democratic, international, we should invoke new modes of thinking, adopt new operational systems, establish new cultural values, create new campus cultures, and release new university functions in order to fully realize our common goals. We fully believe, and at the same time hope, that the foregoing developmental aspirations may be met one by one, as that would surely benefit our nation and society, and increase our national capacity for global competition.

To carry out the goal of an ideal lifelong education, our country will conduct various education reforms that are well-planned, foresighted and comprehensive. The need of learners will also be taken into account when planning educational opportunities, contents and methods. All of this is aimed at shaping a society of the complete person.

Under the framework of lifelong learning society, the following three aspects should be closely linked: family education, school education and adult education. Formal and informal education channels will also be coordinated and integrated to provide more opportunities for lifelong learning for the public. Under this system, all people will find the resources that fit their need, and their motivation to acquire new knowledge will also be strengthened. Our purpose is to make learning an integral part of life. By doing so lifelong education can be effectively carried out to eventually establish a learning society for all people.

References

1. Education for Europeans (1995). *Teaching and Learning: Towards the Learning Society*. A Report from the European Table of Industrialists (ERT). Brussels.
2. Faure, E. A. et al. (1972). *Learning to Be: the World of Education Today and Tomorrow*, Paris.
3. Ministry of Education (1995). *Report on Education of Republic of China: Towards an Educational Vision for the 21st Century*. Taipei.
4. Ministry of Education (1998). *Towards a Learning Society*. Taipei.
5. The Committee on Education Reform of the Executive Yuan (1996). *The General Recommendations for Educational Reform*. Taipei.
6. Yang, Kuo-Shih (editor-in-chief) (2001). *White Paper on Higher Education*. Trans. by Hsü Hsiao-hu. Ministry of Education, Taipei.



SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

**TRANSCRIPT
OF PROCEEDINGS**

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

FOCUS SESSION:

ADMINISTRATION AND GOVERNANCE - PUBLIC AND PRIVATE

SPEAKER:

PROF JOHN NILAND, AC

VICE-CHANCELLOR AND PRESIDENT

UNIVERSITY OF NEW SOUTH WALES

PROF NILAND: I don't have a paper nor an abstract. Indeed, I can hardly wait to hear what I'm going to say, but I'm sure it will all unfold. I, in fact, hope to be better prepared than I just joked that I was.

One of the aspects of university life that strikes me as I go around the world - and I do that quite a bit. At UNSW we have a very large number of international students, about 8,000 international students on the one campus, in Kensington in Sydney, and that entails a large number of exchange arrangements, fostering, building the linkages and so on, so I get to sit in conferences such as this - certainly in places as congenial as Adelaide; other congenial places around the world - like many of us here, and as I go within universities, what strikes me is the sheer diversity.

This is not just within Australia. You could actually construct a wonderfully wide pallet of diversity by just simply looking at Australia's universities. But if you compare the systems in Australia with those even in Britain, with which we are most closely aligned - certainly North America, Asia, South America - there is a tremendous variety in the way in which the institution is put together and the way in which it operates and functions.

We have a single term like "university" but behind that term there is an enormous array of characteristics and features. My feeling is that you might take, for example, the notion of "car" and use the word "car". We know that behind the term "car" there is a significant variation, ranging from Volkswagen, perhaps, to Mercedes-Benz. My feeling is that the range of diversity within universities and the way they are is even greater than that.

It's the same with this term "governance" that's applied to universities. In fact, if I very quickly go through a check list of some of the more interesting questions that you might ask about a university, as one goes into a university, to try and get a sense of its tempo, of its pulse, of its character, the sorts of questions I would ask are:

- Who appoints the CEO or the president?
- Who is responsible for the admission of students?
- Who is responsible for the appointment and then the promotion of staff?
- Who bears responsibility for agreeing to a new building?
- Who bears responsibility for agreeing to take on a significant amount of external funding for research purposes which comes from dubious sources? How do you define "dubious source"?
- Who is responsible for developing new courses?
- Who is responsible for the disestablishment of new courses?

Each of those varies very much from university to university and, actually, each of them has something to do with governance, and I will have to come to the idea of what is governance in a minute.

In terms of the appointment of the president, that is a particular characteristic that I think gives us an insight to the issue of governance. For example, does

the president of a university become the president by a search and selection process, or do they become the president of the university by election, or do they become the president of the university by appointment? And if it one or another of those, as it must be, by whom? Who is the appointee? Who is the electorate? Who is responsible for the search? What is the term or the terms of a president?

There's a university I am aware of in Europe where a president is elected by the faculty of the university and at the first election for the first term must achieve a vote of 50 per cent. If that president wants to run for election for a second term, they must achieve a vote of 60 per cent. If they want to run for a third time, they must achieve a majority of 75 per cent.

There's another university not far away, I'm aware, where for the first term you have to achieve 50 per cent, for the second term 40 per cent, for the third term 30 per cent. Now, you can very quickly work out what's going on there, but they are casting the design in two entirely different directions. In fact, one would say - at least I would say - that if we paint it with a very broad brush, in the first case where it is 50 per cent, 60 per cent and 75 per cent, you're casting in the direction of what might be called collegiality. If it's the second one - 50, 40, 30 - you're casting in the direction of change.

That raises in my mind one of the very first issues about governance. Is governance going to be designed to try and facilitate the one or the other of those two models? And that's just one layer of this whole intricate and interesting concept of governance.

Beyond that, another set of questions that relates very much to governance and underscores the diversity of universities: is there an overseeing body? In the United States, for example, the president tends to answer to a board of trustees and, if it's a private university, that's the end of the story. So the answer there is: yes, there's an overseeing body and it's external to the university but it's not designed by government. So the question "Is there an overseeing body?" - is it an overseeing body within the university or is it an overseeing body that comes from without the university and, if it comes from without the university, is it beholden to government or is it independent of government?

In all of those decisions that I am talking about, who does the electing, who does the appointing, how is all of this put together? The way in which you answer those questions starts to give us some idea of what is this thing called governance. I guess sooner or later I have to chance my hand with a definition. There are, as you might expect, literally dozens of definitions of "governance". If I spend a day or a part of a day in my role as the chairman of a public company listed on the stock exchange, with responsibility to shareholders, I am aware that governance has one characteristic and it's quite different from, say, how you would apply the term "governance" if I am looking at my role as the director of an institute of medical research which is funded by the government but which has essentially a private life.

So how might we define governance? My approach to it is this: rather, what purpose does governance serve? Once you state that, you start to get a sense of what it's about. To me, the purpose of governance is to ensure that the institution delivers what it is supposed to deliver. I've tried to keep this as simple a statement and proposition as possible. The purpose of governance is to ensure that the institution delivers what it is supposed to deliver.

Let me just draw out from each of three words there: the word "ensure", the word "deliver" and the word "supposed". First of all, "ensure". When we say that governance is to ensure, it immediately raises the point that governance is expected to be at arm's length, not hands-on. That is to say, the ensuring is the oversighting. It is the notion that the body that is responsible for governance is not necessarily, and indeed not expected to be, the body that actually delivers. You ensure the delivery rather than undertake the delivery, and I think that's one characteristic of governance or governing bodies that does travel, irrespective of whether it's the private sector or whether it's a community or a public sector body like a university.

That idea of an arm's length I think drives to the idea of a separation of power, because another thing about governance is that it has a lot to do with power points - or points of power, because "power points" has a different meaning these days. Where do the points of power rest within the institution? Do those points of power rest, for example, internal to the university or is there a responsibility, given the level of public funding of the institution, that the points of power rest outside the university? Are they essentially contemporary, current generation, or do they have some trusteeship notion and role into the future?

I will come back to that in a moment, but certainly the idea of ensuring carries with it this idea that, however governance is delivered, it's going to be at arm's length, it's going to entail the separation of power, and essentially that's between setting up and oversighting systems and actually delivering those - if you like, the difference between a chairman and a CEO or, in the Australian system, the chancellor and the vice-chancellor.

It also, I guess, underscores the point that there are bound to be border skirmishes. There are bound to be border skirmishes between the executive side of the exercise and the oversighting side of the exercise. So on the one hand you've got the ensuring; on the other hand you've got the delivery. The delivery is undertaken, I would expect, by the executive. The ensuring is undertaken by the oversighting body. But there is no effective manual that clearly draws the line between the two even in a static circumstance, let alone in a dynamic circumstance where there might be all sorts of other things unfolding under the surface, and again I will come to that also. So the point about ensuring is that it implies that there is an arm's-length relationship between those who govern and those who actually deliver or do within the organisation, but that's a definitional thing and, in practice, it's often hard to see where the borderline is to be drawn.

The second term is "delivery". To me, here, the critical issue is the time frame within which delivery occurs. Are we talking about now? Are we talking about in 10 years' time? Are we talking about in 20 years' time? Universities are very different entities from, say, baked bean factories or car dealerships or supermarkets or cinema chains. One might be of the view that it doesn't matter much whether those institutions are in existence in 30 years' time. I mean, it might to a very small group of people, but if you have been a patron of the cinema, probably you won't care much when you leave the theatre that night whether that theatre is still in existence in five years' time, whereas if you are a graduate of a university, in terms of your own reputational capital derived from that institution, it matters a great deal to you that that institution is present in five years' time.

So therefore you see the way in which we apply the idea of governance to a cinema chain is going to be very different from the way we apply the term "governance" to a university, because with a cinema chain if you are trying to maximise benefit for the shareholders then it may make sense to close down that institution in 12 months' time and distribute to the shareholders, whereas in fact the university's equivalent of shareholders, its graduates, and also its current staff and its emeriti, have an entirely different time frame. Their reputation, their own personal profile, their own personal standing, let alone their professional standing, is tied up in how well that particular entity is doing and whether it continues to exist, whereas the fact that I happen to see *A Beautiful Mind* at that cinema doesn't really have any bearing at all on whether I'm well regarded by my neighbours or by my employer or whatever. So the idea of delivery, I think, raises this very critical issue of the time frame within which it all occurs.

The last thing is the concept of "supposed", what it is supposed to deliver. The word "supposed" in English implies contention. It implies that it could be this or it could be that, and that's my very intention, to underscore the point that what an institution actually delivers itself is a debatable array, and here that needs to be set through the goals, the objectives, and that also will mean that you've got to set a balance between stakeholders.

Now, enough general background, I suppose, and almost philosophising. Let me come straight to the more practical aspects of governance. I think commonly we would see, around the world and across different models of organisational economic activity, that governance is a joint product operating. You've got the governance or the oversighting. You've got the executive or the delivery. The governance would entail such things as the setting of goals, the setting of broad policy, it would reflect on deep strategy but not actually design it, and, most critically, the governance body would appoint the CEO. That's a common phrase. Indeed, it's often said that the most important thing that a governing body does is to appoint the CEO. It can go to sleep, some exaggerate, for a four-year period, but it has to wake up every four years to appoint the right CEO so that that person can then carry forward. And over on the executive side, that responsibility is the development of strategy, the day-to-day management, operational detail and so on - again, this golden

boundary.

To me, one of the four or five real tests of whether governance is effective is whether that golden boundary is in good condition or whether it's under contention. If you've got people challenging where that boundary is drawn - if you like, in a university, between the chancellor and the external members of the university and the vice-chancellor and the executive in the university - if that's under tension then governance is under tension.

It strikes me that, against this general background, one of the characteristics of governance in universities is that it's going to be very much influenced by the culture of the institution within which it's set. I sit on a board of trustees of a university in Singapore. It's the only private university in Singapore; the other two universities are public. And it's remarkable, the difference governance draws from operating in the Singapore culture. When I compare my presence on the governing council of once the Southern Cross University and now the University of New South Wales, because one is based in Australia and one is based in Singapore, there's an entirely different culture and that itself has a very strong bearing on the way in which the recognition of that golden boundary operates.

In Australia it seems to me that we have a number of characteristics. I won't comment on the characteristics in Singapore or in other countries. One can do that speculatively, but let me just stay with Australia. There are two features, I think, of the Australian scene that bear on the border division, whether or not you've got a golden border operating well in Australia. First of all, in the cultural sense, what we know about university life is that it's a highly critical life. From the day we walk into a university as an undergraduate, we are taught to question and we're taught to do things better than we're currently doing. That goes all the way through to our PhD, and once we're through our PhD, we're in our seminars. The whole point of it is to be critical, to unravel, to doubt, to question.

That, I believe, in a university environment gives rise, certainly in Australia, to a sense of endless appeal. That is to say, a decision can be made at one point in an organisation and that doesn't mean that there's closure in a university. Okay, so we decide to do X rather than Y down at the department level, but all that means is that the issue is then redebated at the school level, and if it goes another way at the school level then the issue is redebated at the faculty level, and then at the joint faculty level, and then at the executive level, and then ultimately perhaps, if there is enough heat in the issue, at the governing council itself. So that one of the reasons that that golden boundary that I speak of between the executive on the one hand and the governing body on the other is under constant pressure in Australia is because of the underlying culture within the university, which is to question and to take the view that everybody has a right to participate and have their say.

The participation often is only what I would call veto participation. People don't turn up in great numbers at faculty meetings. They will perhaps stay

away. The decision is made that X should be done rather than Y is done. A number of people are unhappy with that. They then come to the next meeting to vote the proposal down. That is, people turn up at meetings often to exercise veto participation, and that is very destabilising for an environment of good and proper governance.

So one of the questions that we would have to address if we start to discuss what are the ways of achieving effective governance is how we get round this underlying culture in Australia of endless questioning and endless appealing. That's great in an academic environment. It's an essential ingredient in the pursuit of truth, but it is far from an essential ingredient in the achievement of governance stability. Indeed, once it drifts across into governance, it causes instability.

The second aspect, of course, is that in Australia we have derived the British model, which is to say a governing council separate from the government and, in part, separate from the university itself, but increasingly less separate from the university itself. This brings me now to, I guess, the nub of what I'm talking about: whether that boundary is going to be under stress or not, whether there will be border skirmishes back and forward, whether an individual will say, "Yes, I know I'm not supposed to be involved in the detail. I'm a member of the governing council. I'm not supposed to be asking specific questions about why did we paint the bicycle shed blue, but in this particular case there's a good reason for an exception."

Everyone has an exception if there is an environment that causes underlying concern and dissatisfaction. Therefore, I think, whether you're in an environment where budgets are rising or where budgets are declining will have a very strong bearing on the issue of governance. What we have discovered, I think, in Australia is that two things have happened that have put the stability of governance under great strain. One is that the government has started to wind back on funding to universities. That means that the decisions that have to be made at a critical strategic level are not decisions about who gets something new but rather who avoids being closed down, and I think that that boundary between governance on the one hand and the executive on the other can be preserved, the golden boundary can be preserved, far more easily where the decision being exercised by the governance body is "Do we move in this direction?" rather than "Do we close down this? Do we close down that?" It seems to me that when you get into an environment where things are being closed down, bad behaviour emerges in that governance sense and people try to cross the border and, once they have crossed the border, it's very hard to get the whole environment back to that stable environment where you recognise the limits of your side of the fence.

The second thing of course is the emergence of enterprise bargaining. Without drifting into a long dissertation, or even a short dissertation, about the system we used to have, it was quite a unique arrangement and it was one that didn't actually have much regard to the essential capacity of the institution to afford the wage adjustments that were being brought forward. We went through a

tremendous change in the early 1990s and we moved to a system of enterprise bargaining, which has been very painful, but essentially it is saying to the academic community, in the same way as it says to the manufacturing community or the people who run cinemas, "At the end of the day you have to work out your own priorities. At the end of the day you have to decide, if the budget is limited, which will get wage increases and which won't, which will maintain their jobs and which won't."

That is, the decision has to be made within the institution and the priorities have to be set within the institution rather than being set outside the institution through submissions and appeal to government, either by appealing for a new building, which is what we used to do but we don't do any more - we used to all go to Canberra to bid for the five buildings that were going to be built in Australia in the next five years or three years. Now the government provides the money into the university and we within the university have to decide whether it is the school of physiology or the school of mathematics that is going to get the building. That creates a much greater tension because it means that the losers in that process are quite well identified within the institution and they then try to cross the golden border, try to engage the governance body and get involved in operational questions and detail.

This now brings me to my last point. The question is that if you're in an environment where that golden border between the executive and the governance body is under stress and under pressure, and that being created by a highly quizzical environment with budgets cutting back, if you're in an environment where enterprise bargaining requires the institution to take responsibility for its own prioritisation, then it's almost more than one could humanly expect for the governing body, in the way in which it's been currently constituted in Australia, to stand back and to say, "No, we understand what our role is, which is policy, broad detail, and we allow the executive to stay and to do what they're meant to do." It's almost beyond comprehension. Someone said the other day that the interesting thing about human nature is that there's so much of it going around, and it is really an issue of human nature that, faced with those pressures, people are going to behave badly in a governance sense.

Therefore, it seems to me that the structure itself has to protect against that. Very quickly, this is the way I would do that. It doesn't matter to me much whether the governing body is 15 or 30 or 50. Let me assume it's going to be around about 21. What's critical are two or three things. The first is: what's the balance between internal and external, between people who are within the university and people who are outside the university? That balance is critical in keeping that golden boundary preserved and it's also critical in keeping the proper balance between what we assign of our wealth to the present and what we put to one side and retain for the future.

My notion about a university as distinct from running a cinema - I'm not sure how I quite got onto that; I don't mean to give cinemas as much emphasis as I'm giving them, but you see the point I am making. To me, the critical difference is that a university has longevity. It matters where it came from and

it matters very much where it's going to. If the philosophy is that when benefits come we take no more than our fair share - this generation - and we leave the proper share to the next generation, and if every generation does that, before very long every generation will be better off than if they spent everything that they had available contemporaneously, yet the danger with governance under pressure is that we will lose sight of that and, instead of only taking 80 per cent and investing 20 per cent, we will take 100 per cent or, worse still, 110 per cent and leave the problem to our children.

So the balance between people internal to the university and external to the university on the governing body helps address that question of future generations' entitlement to be heard and to be catered for in the present. The rule of thumb that I would use generally is that on a governing body - and I am using the Australian experience - about a third might be internal, but I would like to see two-thirds external.

The second question is: but how do they get to be there? Are they appointed? Are they elected? Are they there ex officio, however? Obviously there will be several who are there ex officio. I'd expect the president to be on the governing body ex officio. But how are the others put there? Very quickly, my model would be, with those 21 people, two-thirds, 14, needing to be external and seven in the end internal. But before you get to that, you only allow appointment and election to constitute 14 of those 21 positions. That is, only two-thirds of the full body are actually elected, appointed or ex officio'd into that position, and once they're in that position, that core, that bedrock two-thirds then selects the remaining one-third, having regard to the skills that the first two-thirds have and don't have and the skills that need to be brought in.

One of the things that I remark on about my own university - and this is the only comment I'll make about the institution itself because it's on the public record and it's probably characteristic of most other universities - we have 21 members. We are also a very international university. We have 8,000 international students, one of the largest numbers of any university in the world, and if you said to most people at the University of New South Wales, "Of these five words, what best describes your self-image?", "research" would certainly get picked, but "international" would be absolutely grasped and promoted. Yet when you look at the governing body of the institution - let me go back one step.

8,000 of our 32,000 students are international. The majority of our staff have higher qualifications from overseas. When you look at our governing body, 21 people, the furthest any one of those members lives from that central campus is 14 kilometres. That, to me, underscores an issue and I believe that if you have a system of governance where the first two-thirds could put into place the remaining one-third, we might at UNSW be able to do for example what Melbourne University has done, which is to appoint the vice-chancellor of Cambridge University as one of its members. Now, they don't actually have a third to put in place anyway, but there is that notion that if you start to bring people in from areas beyond where they would normally be elected, you start

to give future generations a chance. You start to give some assured preservation to that golden border and boundary that I call the divide between the governance, the oversighting, on the one hand and the executive or the delivery on the other.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月9日（星期二）

專題討論

公私立大學之行政與管理

演講者

新南威爾斯大學校長

JOHN NILAND 教授

我沒有論文或摘要，事實上，我也等不及想要聽聽待會兒我要講什麼，不過我想答案一定會揭曉，希望準備更充份些。

我常探訪世界各國大學，常發現令人印象深刻的事。新南威爾斯大學裡有許多國際學生，在雪梨肯興頓校區就約有八千名國際學生，這些學生大都透過合作關係成為交換學生，所以我必須四處開會，就像大家現在一樣，到譬如像阿得雷德或者各國其他地方開會，而各大學之間的巨大差異性更是讓我感到訝異。

這情形並非僅在澳洲可見，在澳洲各大學就可以見到多樣性差異。若各位將澳洲及與澳洲相似之英國及北美、亞洲、南美的教育系統做一比較，便可以發現各機構之間運作以及功能有多大的不同。

「大學」一詞聽起來很簡單，但是「大學」背後有許多的特徵及特色。以「車」的概念和使用為例，大家都知道「車」有許多種類，像福斯和賓士車，而我認為各大學之間的差別及定位比車子還要複雜許多。

這就和應用於各大學之間的「管理」是一樣的。事實上，為了讓大家在短時間內思考大學體制的速度、節奏及特色，我列出大家可能感興趣的問題：

- 校長或董事由誰指派？
- 誰負責審核學生入學申請？
- 誰負責校內職員的職位調度及升遷？
- 誰有批准蓋新大樓的權力？
- 誰有權決定是否接受「不確定來源」之外來研究資金？何謂「不確定來源」？
- 誰負責開新課程？
- 誰有權取消新課程？

以上問題在各大學間都會出現不同的答案，而且那些答案都與「管理」有關，接著我將為大家介紹何謂管理。

我認為在聘任校長時，就可看出與管理相關之特殊特色。舉例來說，大學的校長是否為透過遴選後才能成為一校之尊？或者只是經過選舉？又抑或只需直接聘任便可？而且若有以上情形，又是誰來做決定？誰可以受聘任？誰可以成為候選人？誰又負責尋找合適人選？條件或資格為何？

我記得在歐洲，有間大學的校長是由全校教職員投票選出，而且第一任的得

票率必須達到百分之五十以上，倘若這名校長想要連任，其得票率必須有百分之六十以上，如果他還想做第三任，就必須得到百分之七十五以上的得票率才行。

就我所知，就在不遠處也有間大學對得票率的規則就完全不同。第一任必須有百分之五十的得票率，但第二任就僅需百分之四十，第三任就只要百分之三十即可。各位現在可以很快地了解校長選任在這兩間大學完全不同。事實上，別人會認為，至少我就會認為，在第一個例子中，得票率需逐漸上升的方式即為所謂的「聯合領導」，而第二個得票標準逐漸下降(50,40,30)的例子則傾向於改變。

這讓我想起一個在管理中非常重要的議題：管理是否得以用在實施以上兩種或其一模式？這僅是管理其中複雜有趣的觀念之一。

此外，許多與管理密切相關的問題再度重述大學之間差異的重要性，即是否有任何監督團體？舉例來說，美國的校長必須對董事會交代，特別是在私立大學裡。所以這問題的答案為：有，的確有個外在監督團體，但這團體並不是由政府組成。因此，剛剛那個問題不該為「是否有任何監督團體」，而是「校內是否有任何監督團體？」抑或「是否有外在監督團體？如果有，這團體是否隸屬於政府？」

在我談到的所有事情中，究竟是誰負責選舉事宜？誰負責指派聘任事宜？該如何將所有事情整合在一起？你的回答方式即為「管理」的基本入門觀念。我遲早要談到管理定義的問題。誠如各位所想的，對於管理的定義不下數十種。假如我擔任某上市公司的主席，對股東有義務，我就會知道在此角色下的管理方法。如果我是由政府補助某私立藥品研究機構的負責人，我就會知道該以何種方式管理。這種管理方式和身為上市公司主席的管理方式不一樣。

所以，究竟該如何定義「管理」呢？我的方法是：與其定義管理，倒不如先由管理的目的談起，這樣一來，就可以瞭解管理是什麼。對我而言，管理的目的在於確保機構能真正傳達所應該傳達的部份。我試著儘量將管理的目的簡單地表達出來。管理的目的即在於確保機構能真正傳達應該傳達的部份。

首先我們先談談三個詞：「確保」、「傳達」、及「應該」。第一個詞：「確保」。當我們談到管理的目的在於「確保」某事，即代表管理時應保持距離，而非干涉太多。換句話說，「確保」這動作有監督的意味在。監督者不需要，也不必要，是實際的傳達者。你「確保」傳達的事物，而非「負責」傳達的事物。我認為這就是管理或管理組織的特色之一，與如大學是否為私人產業或公有產業無關。

我認為保持距離管理的觀念就是「分權」的觀念，因為管理還包含另一個重要的觀念：「權能特質」。現今「權能特質」的意義已不同以往，在一機構中，權能特質的安置為何？舉例來說，權能特質應安置於大學內，抑或會受到機構補助金之標準影響，而安置於大學外？此權能特質是當代近期的事物，抑或在未來會牽扯到託管的觀念及角色？

等會我們再來探討這個問題，然而要確保管理能完整傳達到最後，就必須分權，必須區別出執行者與監督者的雙方，或者你也可以說董事長與總裁或是澳洲教育體系下董事會主席與校長的關係。

我想這也強調了一點，就是必然會出現的劃分爭議，也就是在劃分執行與監督兩方時必然會有所爭議，可想而知，執行一方負責傳達事務，而監督一方則必須確保傳達的事務，但難題是在尚未展開傳達工作時，就缺乏一個明確的準則可用以區分雙方，更遑論在傳達當中，所有的問題都會浮出台面，這一點稍後也會加以探討。所以可以肯定的是，確保意味著組織中的管理者與真正傳達的人必須要保持敬而遠之的關係，不過，實際上要明確劃分出雙方的界線非常困難。

第二個詞是「傳達」，重點在於傳達的時間範圍。是現在、十年後還是二十年後？大學與豆子工廠不同，也跟汽車代理商、超級市場或連鎖電影院不同，是因為三十年後公司是否還在經營並很不重要，我的意思是，也許對某一小群人來說很重要，但假設各位是電影院的老主顧，電影散場後，各位可能不會很在乎這間電影院五年後是否仍在營業，反而會非常在意畢業五年後，母校是否還在，因為母校的名聲關係著各位自身的名聲與地位。

因此，各位可以了解到為何管理連鎖電影院與管理大學大不相同。在一間公司裡，為了讓股東獲得最大利潤，必要時可以在一年內結束營業並把利潤分給股東。但對大學的股東，也就是畢業生及現任或退職教職員工來說，則完全不同。我們的名聲、形象、身份、專業身份都與學校的現況密不可分，而到電影院看羅素 克洛主演的《美麗境界》倒是不會影響鄰居、上司或其他人對我的看法。所以我認為傳達的時間範圍非常重要。

最後一個詞是「應該」，也就是應該傳達什麼。應該一詞隱含「爭論」意味，意指可能是這樣也可能是那樣，我的目的是要強調組織中的傳達本身就倍受爭議，必須要設定其目標，也要在股東中取得平衡。

我想背景大致都交待清楚了，這大都與哲理有關，現在我們直接進入到實際的管理問題。在全世界各種經濟活動上，我們能發現管理是共同的产品經營，有人負責管理，有人負責監督。管理需包括設立目標、設立一般政策，影響長遠策略，不過並不是真正地設計策略，最重要地是管理者必須指派執行總裁，執行總裁是個習慣用詞。更確切的說法是，管理者的主要工作就是要指派執行總裁。誇張一點就是管理者可以沈睡四年，但每四年要醒來一次，指派正確的人選以便使組織繼續運作下去。而執行者則負責開發策略、改善每日的經營管理工作與經營的細節等等一再重覆諸如此類的工作，這就是最佳界線。

我認為，利用最佳界線是否受到爭議可以測試出管理是否有效進行。假設有人質疑權力的劃分，例如有人質疑在大學中董事會主席與校外成員的分界或校長

與執行者的分界時，情況若變得緊張，這表示管理也處於緊張局勢。

我想到和此一般背景不同，大學管理的特色是很容易受到學校本身的文化影響，我也是一所新加坡大學的董事。該大學是新加坡唯一的私立大學，其他兩間都是公立大學。而值得注意的是，新加坡文化會影響其不同的經營管理方式。比較我之前擔任的南十字星大學董事和現任的新南威爾斯大學董事，因為在澳洲和新加坡的校風不同，所以學校的文化完全不同，對於最佳界線也有很大的差異。

澳洲各大學有一些特色，今天我們不談新加坡或其他國家的大學，你可以自己去推測，在這邊我只針對澳洲大學提出我的看法。在澳洲，不管權力劃分是否恰當、是否完美，都會出現兩個現象：第一，在文化方面，我們所知的大學生活非常嚴苛，從第一天成為大學生開始，就被教導要時時提出質疑，要表現比現在更優秀，這樣的生活一直持續到博士班，直到拿到學位，整個教育的重點就在於要有批判的精神、努力揭開謎題、抱持懷疑態度以及時時提出質疑。

我相信在大學環境中永遠有上訴不完的問題，在澳洲尤其明顯；也就是說，大學中一個團體做出的決定並不一定是最終定案，所以一個系決定通過一項提案，還必須經過學院再作討論，再呈交到高層教職員、行政人員，最後如果這個議題需要再作探討，那麼可能會由董事會再討論才定案。所以在澳洲，劃分執行與管理雙方的最佳界線會不斷受到壓迫，因為大學中的文化即是每個人都有權利參與及發表自己的意見，並且要不斷提出問題。

基本上參與討論通常是為了反對原有的提案，出席教職會議的人通常不多，大部分都會缺席，決定常指出應該這麼作而不是那麼作。若有人不滿意討論的結果，便會在下一個會議推翻這個提案。也就是說，出席會議的人其目的通常是為了反對一個提案，如此一來，對一個恰當的管理環境來說，變動實在太大。

因此，我們必須提出一項質疑，一個有效的管理方法是否必須避開如澳洲大學不斷懷疑與上訴的文化，這種文化在學術環境中固然很好，因為這是追求真理的必要元素，但對管理的穩定性來說卻不是如此。一旦涉及管理，就會出現不穩定的現象。

第二個現象是雖然澳洲體制是典型的英國體制，管理議會與管理當局應當分開。管理議會在某種程度上自學校分離出來，不過，這種分權的界線愈來愈不明顯，而且不管劃分的界線是否會受到壓迫、爭議，或者是否會有人說：「對，我知道我不應該太注意小細節，我是管理議會的一員，不應該質疑為何要把腳踏車漆成藍色，不過，在此特例中，我有十足理由加以拒絕。」

若人處於擔心或不滿的情況之中，就會有例外的做法，所以不論預算是增是減，都和管理問題有很大的關聯。我認為目前有兩件事會使澳洲大學管理的穩定性陷入危機，其中一件是政府開始回復提供大學的資金，這表示在關鍵的時刻，

所做的策略性決定是在於誰能避免停止運作的命運，而不是誰能獲得新物品。如此一來，管理和行政的界線便得以維持，能更容易劃清最佳界線。管理部門所做的決定便是「我們朝此方向前進好嗎？」，而不是「我們停止這件事或那件事好嗎？」對我來說，若環境阻礙了事情的發展，管理就會開始出問題，壞習慣紛紛出籠，人們試著越界，一但跨出了界線，便很難使情況回到穩定時的狀態，也就無法看清自己周遭的限制。

第二件當然就是企業協議。關於以前的制度，不用長篇大論或簡短說明了，那真是個特殊的系統，關於學校機構的基本能力，也就是以往曾提出過提供薪資核算的能力，並未多著墨。在九〇年代初期，我們經歷過激烈的轉變，而朝向企業協議的制度化前進，雖然這是一段痛苦的歷程，但是基本上對學術社會、工業社會，或從事電影業的人們來說是相同的道理：「在一天結束之前，你必須釐清自己應該要先做的事為何。在一天的最終，要做出決定，如果預算受限，哪些人的薪資要調高，哪些人不用，哪些人可以繼續留任，哪些人不能。」

因此必須在學校機構中做出決定或定出優先順序，不是在學校機構外向政府提出要求，或向政府求助蓋一間新大樓，以前我們是這樣做，現在則不一樣了，以前我們全體人員會到坎培拉競標，要在澳洲於三或五年間蓋出五間新大樓。現在則是政府提供大學補助金，我們要在學校裡決定是生理學學院還是數學學院可以擁有新大樓。這樣的情況就會產生更為緊張的情勢，因為如此一來便可明顯地看出輸家是誰，輸家就會試著越界，想要佔用管理組織，來參與營運問題和細節。

這個問題引出最後一個重點。在備受懷疑的情況下刪減預算所造成的問題是，若界於行政和管理組織之間的最佳界線受到壓迫，以及企業協議如果要求學校機構要對自己優先處理的事負責，就無法期望新成立的管理組織回答：「不，我們了解我們的角色為何，就是訂定政策、處理細節。我們也允許行政部門去做他們想做的事。」這根本是異想天開。有人曾說過，人性有趣的地方在於有許多事是隨著人性衍生。當人面對上述壓力時，受到管理意識的影響，就會有踰矩的情況產生，這就是人性。

因此結構本身就必須要有防止以上情況發生的作用。不管管理組織是由十五或三十或五十人組成，假設是二十一人，要注意以下二或三件事情。第一件事：內部和外部，意即大學內部的人和外部的人之間的平衡點在哪裡？這個平衡點對於維持最佳界線很重要，同時，對於保持目前的資源和為未來留下的財富之間的平衡也具重要性。

拿我對大學的概念來和經營一間電影院相比，不曉得我是怎麼了，我不是故意要一直強調電影院，但是你們都知道我的重點就好。對我來說，最大的不同在於大學的運作時期必須長長久久。有必要注重大學源自於何處，走向何處的問題。若大學的觀念是當利益進袋時，我們只在這個年代撥用該用的那一部分，留下一筆給下一代使用，若下一代也依樣畫葫蘆，會比把當時的經費全都花掉要好得多，

不用多久，他們也就會有一筆可觀的餘裕。但是處於壓力之下的管理便會產生問題，我們會失去洞察力，不只使用百分之八十，投資剩餘的二十，而是提撥百分之百，或更糟，撥用百分之一百一十的利益，然後將問題留給我們的下一代。

所以在管理組織方面，大學內部和大學外部的人，他們之間平衡有助於未來幾代應有的權力受到照料，讓現在的人聽見未來的要求。以澳洲的經驗而言，一般來說，我所採用的方法是，在管理組織方面，約有三分之一席次為大學內部的人，另外三分之二則為外部的人。

第二個問題：這些人是如何產生的？由誰指派的？還是選舉出來的？還是轉任？顯然地有幾位是轉任職，我想校長就是轉任進入管理組織。其他的人呢？我很快地以自己的情況舉例說明，如我之前所說的管理組織有二十一人，其中的三分之二，也就是十四人從大學外部而來，最後剩下的七人則為學校內部的人，但是在此之前只能以派任和選舉的方法先組成二十一席中的十四席，所以整個組織中只有三分之二是透過選舉、委任或依職位而任職的，一但任職後，這群人就是組織的核心，他們要選出剩下的三分之一，視自己所擁有或沒有的能力，又或者組織需要的能力來選擇。

我想提出其中一點來談談我的學校，這也是我想針對學校機構本身所做的唯一評論。由於本校是公立大學，所擁有的特色大概也和其他大部分大學相去無多。本校有二十一位會員。本校也是十分國際化的大學，擁有八千名國際學生，為全世界擁有最多國際學生的大學之一。若你對新南威爾斯大學大部分的人說：「在這五個字中，那一個字最能符和你自己的定位？」大家大概都會回答：「研究」。不過「國際化」也會是最多人回答和推舉的答案，但是仔細看看校園機構中的管理組織，讓我再回顧一步來談談。

本校三萬二千的學生中有八千人為國際學生，本校教職員大部分都是在國外獲得高等學歷。當你仔細看我們的管理組織時，這二十一個人中住在離校本部最遠的人，其住所距校區只有十四公里。對我來說，這種情形突顯了一項議題，我相信若在管理制度中有三分之二的人可以指派剩餘三分之一的人，新南威爾斯大學便可以效仿墨爾本大學，委派劍橋大學的校長為董事。不過實際上他們不能指定那三分之一席，但若能吸收他處無法成為管理組織成員的人，這些人就得發揮所長，確保最佳界線。而那條劃分管理、監督和行政或傳遞的界線便可續存下去。

ADMINISTRATION AND GOVERNANCE

PUBLIC AND PRIVATE

Liu Yuan-Tsun

President, Soochow University

ABSTRACT

There are in total 137 universities and four-year colleges in Taiwan at present, 52 of them are public and 85 are private. The numbers, compared with only 4 all public fifty years ago, indicate great changes. The administration and governance of these institutes have undergone a great transformation since the revision of University Law in 1994.

Public and private universities observe the same University Law and are similarly supervised by the Ministry of Education, but there are conspicuous differences between public and private universities in issues regarding their administration and governance.

The major differences in regard to their administration are as follow: 1 Public university staff members must pass the examination for government officials, while those in private ones need not. 2 Public universities receive much greater funding from the government and have traditionally not relied on endowments, while private universities mostly rely on tuition and fees as well as endowments. 3 Private universities are more flexible in organizational or personnel matters, while public ones are comparatively more rigid.

The major differences in regard to their governance are as follow: 1 A private university is always governed by its board of trustees, but there is no board of trustees or regents for a public university. The president of a public university is responsible directly to the Ministry of Education and must deal with the Legislators. 2 The public university is also governed and sometimes hampered or even cripples by the University Council; while for the private universities in general, the University Council becomes an obstacle for the president only occasionally. 3 Public universities are constrained by the personnel and accounting laws and rules of the government, while private universities observe the Private School Law.

**Administration and Governance
-- Public and Private**

**Liu Yuan-Tsun
President, Soochow University
April 9, 2002**

Introduction

There are in total 137 universities and four-year colleges in Taiwan at present, 52 of them are public and 85 are private. Compared with four public and none private universities and colleges fifty years ago, the numbers indicate indeedly a tremendous increase. The total number was 29 in 1986 and 86 in 1998, it is therefore very clear that the greatest increase has occurred only in recent years. The reason is doubly: while the government encourages establishment of new universities, many junior (technical) colleges have been escalated to four-year colleges.

With a population of about 22 million and area of only 36 thousand square kilometers, the density of universities and colleges in Taiwan is undoubtedly the highest in the world. Roughly forty percent of the 19-year old youths are admitted to four-year colleges as of now, and the percentage will very soon grow to fifty due to the decrease of birth rate as well as the further increase of higher education institutes at the same time.

More youngsters are expected also to go abroad either to foreign countries or to Mainland China to pursue higher education as the result of entrance of Taiwan to WTO. The consequence of all these happenings is that competition among higher education institutes is going to be very keen and the average quality of students will deteriorate. This proposes unprecedentedly severe challenges to university administration and governance.

As private college education plays a significant role in Taiwan (about two thirds of college students study in private universities or colleges), the differences between public and private universities in issues regarding their governance and administration need be deeper investigated.

Governance

We have to distinguish between external governance as by the government or the board and internal governance as by the faculty. As there are no boards of trustees or regents for public universities, the external governance is solely by the government. The public universities observe the University Law and various rules and orders of the Ministry of Education as well. Besides these, they are also constrained by personnel and accounting laws and rules of the government as their budget is finally decided by the Executive Yuan via political dealing with the Legislature. In recent years, the public universities are allowed to maintain their own Institutional Development Funds which allow more flexible employment of the resources.

The private universities are governed doubly by the board of trustees and the government as well. Private Universities observe both the University Law and Private School Law. While private universities are more flexible in their exploitation of resources, the tuition and fees are constrained by the government. It is only in recent years that private universities are allowed to invest into enterprises (with certain restrictions) and the enrollment is controlled by a new design of so-called "Total-amount Supervision" which allows more flexibility of modulation.

The tax law is obviously unfair for private universities with disadvantages in their fund-raising, for donation to a private universities is tax-deductible only up to twenty percent of the personal income, while donation to a public university is hundred percent tax-deductible. The revision of the Private School Law three years ago allows fifty-percent tax-deduction for donation to a private university through a government-operated foundation, which is expected to inaugurate finally in the near future. One may expect naturally that public universities are more attractive to donations, despite all claims of improvements by the government.

As for internal governance, the University Law dictates that all universities and colleges should have an University Council which is formed with more than half of the members being faculty members without administration duties and is the "decision-making council". As the Private School Law renders the board of trustees of a private university also the obligation of decision-making concerning important issues, the University Council of a private university plays the role of legislature and consensus formation in general. For a public university however, since there is no board of trustees or regents, the University Council sometimes provokes serious problems and may hamper or cripple its development. The University Law is in the process of new revisions which hopefully will improve the situation in this matter.

The selection process of the president is different for public and private universities. A search committee for the president must be formed whenever the position of a university president is available, according to the University Law. While the search committee is organized by the board of trustees in a private university, it is organized according to the resolution of the University Council in a public university. The searching process in a public university may become extremely political as to involving voting by all faculty members or approval by the University Council in some cases, and provoke partisanship within campuses. The final decision is made from two or three candidates by the Ministry of Education in the case of a public university, and by the board of trustees in the case of a private university, according to the University Law.

There have been primitive evaluation of certain disciplines or of universities and colleges as a whole by the government in recent years. While the results have been made public for the private universities with influential effects, the results have been concealed for some reason in the cases of public universities.

Administration

Three aspects will be mentioned in this context, which discern the administration of private universities from public ones. Firstly, the private universities are more flexible in their organizational and personnel matters, while the public ones are comparatively more rigid. The staff members in a public university must pass examinations for officials and are therefore more provisioned by the government. As a consequence, the private university staffers tend to be more innovative and professional than the public university ones.

Secondly, private universities rely mostly on tuition and-fees and the government subsidies amount to at most twenty percent of the budget, while public universities rely mainly on governmental subsidies and grants. As a consequence, the average tuition of private universities is about two or more times higher than that of public ones, causing high school students to prefer entrance to public universities, disregarding the actual quality of education.

Thirdly, as the autonomy of universities has gone astray to over-emphasis on the autonomy of the faculties in recent years, with negative consequences on the recruitment of new faculty members and the renewal of old ones, the administration in universities face serious challenges. The private universities are in general more immune to this plague.

Prospects

The University Law and the Private School Law are undergoing another great revision since 1993. Three points must be noted especially. Firstly, the public universities are to become corporates with boards of regents similarly as private universities. The external governance of universities will therefore converge for public and private universities. This would provide better foundation for more reasonable allocation of resources and evaluation processes.

Secondly, the revision of the Private School Law which allows each "school-establishing corporate" to incorporate two or more schools and the new provision which invites formation of public university systems governed by the same board of regents will certainly induce consortium of universities, with unexpected results in the future. Merger of public universities will be another alternative. More attention should be paid in this matter.

Thirdly, as private and public universities become more and more alike regarding their governance and administration in the further future, we may expect also the becoming of some private universities to public ones. Whether governmentally governed or privately governed, all universities coexist eventually for the benefit of the public and are equally supported by the public.



**TRANSCRIPT
OF PROCEEDINGS**

SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

FINAL REPORTS PLENARY SESSION:

RESEARCH

SPEAKER:

PROF BRIAN STODDART

PRO VICE-CHANCELLOR RESEARCH AND INTERNATIONAL

THE UNIVERSITY OF NEW ENGLAND, AUSTRALIA

PROF STODDART: I will try and race through this fairly quickly and the only reason I've got PowerPoint, Prof Chung, is because I am the fortunate possessor of a Stan Chi Acer laptop. What I have tried to do is really look at the last couple of days of discussion and to see if we can draw out of it where there are points of similarity and points of difference. Prof Liu has referred to some of those already, I think, but if you just run down that list you'll see that what Taiwan and Australia share at the moment is a number of things that are very critical in the research development area, some of which relate to commercialisation and some of which relate to research development at a national and at a local level, and within institutions themselves.

A couple which I think the Australians found most interesting were the emergence of identified areas of speciality - we've spent much of the last two years on policy formulation looking at how we can do that within Australia and it's fascinating for us to see that our Taiwanese friends have got the same sort of challenge - and again, a little further down, the increasing significance of intellectual property and the use of intellectual property and what universities and what national governments believe should be done with that IP.

One that recurred right through was the issue about attracting back researchers. That is exactly a major issue for us here in Australia and the federation fellowship scheme which has been discussed a little bit has highlighted, I think, some of the difficulties involved there. It's a very important issue around the professional development of researchers. How do we actually get them in, train them, retain them, keep them there?

Research training needs refers to the supply of postgraduate students. Again, I think we found within both systems that there are some perturbations in the system which is causing some issue about supply. We noticed it very markedly in the IT and the computer science area. That was probably not much of a surprise to most people, but it was in some of the other areas there. There's certainly a shared view about looking at international collaboration, perhaps in a much more programmed way than we've done so far.

The points of difference - and I have to say that I'm inserting some of my own analysis in here and other people may disagree with that - but it seemed to me that in the commercialisation area Australia seems to have been pushing a lot further ahead at the individual institutional level about commercialisation, compared to what has been happening in Taiwan, where there is a very strong national role by the National Science Council. I can be corrected on that, but it seemed to me to be a very interesting difference that we could probably pursue.

The control of patenting was one that fascinated me enormously - again, much more direction at a national level from the NSC in Taiwan, whereas here in Australia we are looking at it very much at an individual institutional level. I think there are probably, again, some fruitful discussion that we could have.

Levels of government funding: one or two of the figures that were moving around yesterday from Taiwan created a certain amount of envy amongst some

of the Australian research pro vice-chancellors and deputy vice-chancellors, but we were heartened this morning to see that there seemed to be the same sort of problem in Taiwan as in Australia, where sometimes the figures seem to say different things to different people, which was a reflection of yesterday when we had - I think all of us were here for that wonderful analysis of Mike Quinn's salary and tax arrangements - which again highlighted the whole business of how do we actually get people back into our system?

Approaches to industry funding: again there were some quite significant differences. Some points to consider perhaps in all of this - as we look forward to developing further collaboration between Australia and Taiwan in the research area - it just seemed to me to be a list of things that we could actually look at as perhaps being the vehicles for particular projects, particularly on the development of people.

There was a lot of discussion about developing entrepreneurial cultures. It seems to me that we've got some complementary skills and if we were able to put them together it could be a quite powerful international force. The issue that Prof Liu referred to - basic to applied research; the balance between public good and commercial interest - again, something that is probably going to become more and more significant for all of us; how do we actually keep creating the idea flow that we can put into all of this research activity? - and a very common one, I think, in lobbying governments for additional funding.

Just finally, where to from here? Very clearly there is already a lot of collaboration between individual universities in both our systems, and I think what we've all got out of the last two days are some very good ideas about some potential funding sources that we might look to in strengthening particular collaborative projects. The joint working group will be meeting tomorrow and I think that would be an opportunity for us to take some of these particular ideas and perhaps put into play - well before we meet next time as a joint working group - there are a lot of things we could do over the next few months to agree on perhaps half a dozen projects, or even two or three in the research area. I think one that would be very significant is a clear identification of the overlapping areas of speciality that we are all aiming at.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月9日（星期二）

專題討論結語

研究

演講者

澳洲新英格蘭大學副校長（研究及國際）

BRIAN STODDART 教授

我會儘量言簡意賅，還好有 Stan Chi Acer 筆記型電腦，我想就用 PowerPoint 向各位做簡報。我想就過去幾天關於台灣和澳洲在研究發展上異同的討論來作個結論，劉教授已經提到其中幾點，做進一步探討的話，將發現台灣和澳洲目前合作的研究發展計劃，有的是與國家、地方和學校研究發展息息相關，有的則與研究成果商品化有關。

澳洲有一項有趣的發展，那就是專業部門的認定及專攻，我們花了兩年時間擬定政策，以定位出澳洲的重點專業，有趣的是台灣也面臨了同樣的挑戰。未來智慧產權的尊重及運用，將是各大學及政府的重點項目。

還有留住研究人才的問題。在澳洲這確實是個大問題，我們曾簡短提過澳洲聯邦院士獎勵計畫的困難處，研究人員很重視專業發展，如何吸引、訓練和留住研究人才，的確是個難題。

研究訓練人才泛指研究生的不足，澳洲和台灣都有研究生不足的困難，特別是在電子資訊和電腦科學方面。當然這是個眾所皆知的現象，雙方在國際合作及人才培訓計劃上已有共識。

至於台灣和澳洲在研究發展上的差異處，我想講的只是個人的看法，各位也許不盡同意。澳洲在研究商品化部份較為積極，尤其大學會努力爭取研究商品化的機會；而在台灣，則多由國家科學委員會主導。如果我說的有誤，也請大家指正，這方面的議題很有趣，值得進一步探討。

台灣對專利權的保護工作也令我感到驚歎。在台灣，專利權的事務多由科學委員會主導；而在澳洲，這些事務大都由個別學校機構自行負責。我想此方面也值得進一步探討。

在政府資金層面，昨天我們看到台灣方面的統計數字，令在場許多澳洲大學校長及副校長十分羨慕；但是今天早上我們卻又十分遺憾地看到台灣和澳洲也面臨著同樣的問題。不同的數字對不同的人而言，有著不同的意義，雖然昨天 Mike Quinn 做的薪資和稅務分析令人驚歎，如何將人材納入系統中更值得關切。

台灣與澳洲在招募業界資金的方法上有許多顯著的不同。在推動共同研究計劃的發展上，雙方仍有許多項目必須討論，例如特定計畫的合作方式，特別是人材培育的合作上。

企業文化的發展已經多有討論，我們也下了不少基本功夫，如果能夠善加運

用這方面的技術，相信可以成為有力的國際動力。劉教授提到的運用研究基礎以及公共利益和商業利益的平衡等議題，在未來會變得越來越重要。我們如何激發創意，而且落實於研究當中，我想遊說政府爭取更多資金是最常見的方法之一。

最後，未來的走向為何。顯然地，澳洲和台灣已有許多大學間的合作，這兩天的會議相信引發各位不少尋找合作計劃資金來源的新點子，明天共同工作小組的會議是將計劃落實的好機會。未來幾個月我們將努力達成共同目標，也許簽署幾個合作計劃，或者合作兩三個研究計劃，至少我們會明確找出雙方共同努力的專長研究目標。

AUSTRALIA TAIWAN CONFERENCE ON HIGHER
EDUCATION
FINAL REPORTS PLENARY SESSION
RESEARCH

Chao-Han Liu
National Central University

ABSTRACT

Although the importance of research in universities has been well recognised, the debates on how to carry out this essential duty on each individual campus never end. New issues come up for each generation as one faces new challenges. In this talk, I will attempt to point out some of the new challenges facing research universities in the era of the so-called knowledge based economy. Issues such as basic versus applied research, disciplinary versus inter- and cross-disciplinary research, mission oriented research, academia versus commercialisation, intellectual property issues, and the availability of resources, etc will be discussed with appropriate examples when available.



SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

**TRANSCRIPT
OF PROCEEDINGS**

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

FINAL REPORTS PLENARY SESSION:

TEACHING AND LEARNING

SPEAKER:

PROF TREVOR GRIGG

**DEPUTY VICE-CHANCELLOR,
INTERNATIONAL AND DEVELOPMENT**

THE UNIVERSITY OF QUEENSLAND

PROF GRIGG: This is quite different from what I had imagined I had committed myself to do. I thought I was committing to a nice, fireside chat with the small group who had faithfully sat through the teaching and learning stream. I also must apologise to those who are in the teaching and learning stream. You may not have recognised that I was at the same sessions that you were and if that's the case I do apologise for that.

The teaching and learning stream was broken up into three areas: one was internationalisation, another was online learning and the third was lifelong learning. On reflection I thought this way of segmenting the stream was indeed quite insightful. Internationalisation really required us to address the context within which education now takes place and, in particular, to reflect on the important drivers of ICT and WTO and globalisation generally and their influences on our responses to the context.

The lifelong learning really asked to reflect on educational needs and the relationship of those needs to the benefits that they would confer on communities and society, both economically as well as to the individual. Indeed, in Prof Dunkin's presentation on lifelong learning there were four features of lifelong learning which I think we should all reflect on - the essential characteristics of it: first of all, the centrality of the learner; secondly, the emphasis on learning to learn; thirdly, the importance of providing learning opportunities in all settings, both within work settings and in institutional settings; and finally, of course, the important feature that it must occur over a lifetime.

But what was also interesting, I think, with respect to lifelong learning was that very much of it is still up-front - that is, prior to rather than being concurrent with the execution of professional or community contribution. For example, in Australia 50 per cent of those being educated were in work, whereas only 13.5 per cent of those in work were actually in education. Quite alarmingly, perhaps, only 20 per cent of those unemployed in Australia at the present time, engaging in learning or education of one kind or another. I think in our discussions it did highlight the issue of whether there is a disconnect or not between learning and those who design the learning experiences, and their application in business, professional and community settings.

The third area was online learning which, of course, required us to think about how learning is delivered. It required us to think about the student and about the educational product. I guess the issue there is: what is the role of ICT as an enabler to effective learning? The context, the educational needs and the issue of the student and the educational product in the discussions really highlighted the need for a reconceptualisation of teaching and learning.

There is a definition from Whitehead way back in 1929 which I happen to accidentally have with me, I notice, in my bag. It says, "Education is the art of the acquisition of the utilisation of knowledge." I think that was very much the flavour that was coming out of the session.

With respect to some of the matters that were raised, as an Australian I was quite impressed by what appeared to be well thought out and coordinated national approaches in both online learning and, indeed, in lifelong learning in Taiwan. Indeed, the commitment nationally to those initiatives I think is something that we can learn much from.

Some of the other issues that were brought up really related to the importance of language in international education, the language of instruction and the significance that had for the design of educational products- issues like what does it mean to internationalise a curriculum? Does it mean the perspective on a context? Does it mean homogenisation of content regardless of where one is without regard to geographic location or culture?

Quite a bit of the discussion was about quality assurance and the different approaches that are being taken in our two countries with respect to that, with some reflection on what indeed Australia was now entering into with regard to quality assurance and the recognition that self-accreditation of universities, while self-satisfying to the universities themselves within Australia, not necessarily meeting the expectations or needs of those with whom we wish to engage offshore.

There was also the issue, I think, in the implementation of flexible learning within institutions to recognise that effective implementation would require major cultural change within institutions. It would require major organisational commitment, both in time and resources - and in philosophy - and, most importantly of all, it would demand significant academic and corporate leadership. Of course, finally, it would require the management of risk. I think that's probably enough, but if those of you who were there can recognise the sessions, then I'll be satisfied. Thank you.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月9日（星期二）

討論與結語

教與學

演講者

昆士蘭大學副校長（國際發展）

TREVOR GRIGG 教授

這跟我原先預期的情況不太一樣。原先我以為是坐在火爐邊，跟一小群從頭至尾參加教學相關演講的觀眾好好聊聊天。我同時得向參與教學相關所有場次演講的觀眾致歉，因為很抱歉各位可能曾在其他場次聽過類似或重復的內容。

教與學的討論分為三組：第一組是討論「國際化」，再來是「線上學習」，第三個則是「終身學習」。現在回想起來，我覺得這樣的分組方式非常好。國際化要求我們要探討現在教育施行的環境，特別是要思考資訊傳播科技、世界貿易組織以及全球化等重要的趨勢，以及這些趨勢會如何影響我們對教育環境所做出的反應。

終身學習則是要求我們思考教育需求，以及這些需求的關係可為社區及社會帶來什麼樣的利益，包括對經濟及個人的影響。之前 Dunkin 教授在談論終身學習時，曾提到終身學習有四大特點，我覺得我們應該要好好思考這些特點，特別是這些特點到底有何特色。首先是學習者的求學心；其次是要強調學習者如何學習；第三則是在各種環境中提供學習的機會。不論是在工作環境中，還是在教育機構中；最後一點則是終身學習最重要的特點，那就是要終身學習。

不過，談到終身學習，我覺得非常有趣的是，它仍屬於前置作業，也就是說，人們都是先學習，然後才貢獻其專長或為社區服務，而非同時進行。舉例來說，在澳洲，有百分之五十的人在受教育的同時也在工作，但只有百分之 13.5 的工作人口在工作的同時接受教育。值得注意的是，目前在澳洲，大約只有百分之 20 的失業人口正在接受教育或訓練。我想，在我們的討論中，我們的確點出學習和設計學習經驗的人之間是否有落差的問題，以及學習在業界、專業環境及社區中的應用情形。

第三個領域是線上學習，讓我們好好思考學習的方式。我們得考慮學生和教育產物。我想，我們真正要思考的問題是，資訊傳播科技如何提升學習的效率？討論中提到的大環境、教育需求、學生問題及教育產物，事實上都在告訴我們，我們必須重新思考何謂教？何謂學？

1929 年，哲學家 Whitehead 曾為教育下了個定義。我正巧把他的著作放在我的手提包裡。他是這麼說的：「教育是學習如何使用知識的藝術。」我想這正是這場討論會的重心。

至於我們在討論中談到的其他議題。身為一個澳洲人，我對台灣政府在線上學習及終身學習如此考慮周詳又協調的作法，印象十分深刻，台灣政府全心投入這一點非常值得我們學習。

另外一些議題其實是跟語言在國際教育中的重要性、授課語言及其對教育產物有何影響有關。比方說何謂國際化課程？是指對一個環境的看法？還是指不論地點、不論文化，將所有內容一致化呢？

有些討論內容談到品質控制以及兩國採取的相關作法，也有人談到澳洲目前品質控制的情況。另外，大家也談到目前澳洲大學自我評鑑的情況雖然符合澳洲大學的要求，但卻不一定符合其他國家一些學校的預期。

我們同時也討論到是否要在教育機構中施行彈性學習。由於教育機構必須進行重大的文化改革才能有效地運作；同時也需要組織投注心力，包括時間與資源，以及哲學層面上的。更重要的是，需要學術界及商界的領導。最後，當然也需要風險管理。我想大概內容就是這些。如果各位與會代表都能記得這些內容，那我就心滿意足了。謝謝各位。



SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

**TRANSCRIPT
OF PROCEEDINGS**

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

MONDAY, 8 APRIL 2002

FOCUS SESSIONS:

**ADMINISTRATION AND GOVERNANCE -
LEGISLATIVE FRAMEWORK**

SPEAKER:

PROF ROBERT SMITH

DEPUTY CHANCELLOR

SOUTHERN CROSS UNIVERSITY

PROF SMITH: Thank you, Prof Hwang. I should tell you that I am an emeritus professor. I am no longer a real professor - I'm not sure that I ever was - and I describe myself these days as a lapsed geographer and a used vice-chancellor, in the sense that I used to do that but I no longer do it; indeed, I'm somewhat shop-worn. But I do have a keen interest in university governance which I'm able to follow through my presence on the Southern Cross University governing body in northern New South Wales. So it's a genuine pleasure for me to be able to have this opportunity to talk to you a little bit about governance in Australian universities.

I should tell you that in preparing for this presentation I wondered how I could speak for 20 minutes with the raw material being the university acts. University legislation, in Australia at least, is not exactly riveting reading. It's not the sort of thing that you put under your pillow at night or next to your bed. Well, if you do wake up and you read a university act, you're pretty well guaranteed to go back to sleep quickly. But, nevertheless, I have tried to distil from the legislation for our Australian universities some features of governance, particularly governance. I think my remarks, Prof Hwang, are more on governance than they are on administration, so perhaps if there is an imbalance we could pursue that in discussion.

The outline of my presentation will be remarks of context, some remarks on the characteristics of enabling acts and something about issues of governance, management and administration. To begin with context, the first of my three main topics, in Australia - as I think Dr Shergold said this morning - "university" is a protected term in all Australian jurisdictions. They are protected through the companies legislation and through business names legislation. This ensures that any institution describing itself as a university has to have had the imprimatur of legislation being passed through the appropriate house of parliament and promulgated. So "university" is an important matter of context here in Australia. In certain jurisdictions in the United States, as I'm sure many of you know, institutions can be established - not in all jurisdictions; only in a small number - without the same constraint.

A second matter of context: enabling acts of the relevant Commonwealth, state or territory government are essential. That flows from the first point, but I think it is important to realise that the acts governing our universities are normally state acts or territory acts - Northern Territory and Australian Capital Territory - and reference has already been made to the fact that the Australian National University is established under an act of the Commonwealth parliament.

Thirdly, constitutionally here in Australia the education is a state or territory responsibility. It is not a Commonwealth responsibility. The Commonwealth's presence in higher education funding in particular is by agreement with the states and by use of a particular section of our constitution to transfer funds directly from the federal treasury to the universities. I think there is a provision that takes them through state treasuries, but that legislation provides that the funds go direct from the Commonwealth to the states. It's an unusual feature.

A fourth matter of context: there are at least four Commonwealth government pieces of legislation that are relevant. In addition to the overarching enabling act of the state, there are at least four pieces of Commonwealth legislation. The first is the Higher Education Funding Act, or the HEFA act. It is under this act that funds are transferred from the federal government to universities, and the all-important document in Australia is the schedule to the HEFA act and the presence of an institution on that schedule. We only have two private universities, but if you are a private university - or if you are an aspiring private university in Australia, and there are several on the books at the moment - an important matter of discussion in the boardrooms and other forums is, "How can we get ourselves onto the schedule to the HEFA act?"

A second important piece of legislation is the Education Services For Overseas Students Act - the ESOS Act - which attempts to ensure that overseas students who come here get what they expect to get and pay for. In addition to that, the Migration Act provides for the ways in which universities will recruit and bring students to Australia, and the fourth important piece of legislation you heard quite a bit about in the previous session, the Australian Research Council Act, which establishes the ARC as a separate body. I should perhaps have a fifth there, and that is the National Health and Medical Research Council Act, but I think you have heard a bit about that also.

On the topic here that I've called Chronology, the final matter of context, I just wanted to say that of the 39 universities - and I've read an abstract in the Book of Abstract that says there are 40; I must speak to the author of that abstract and see whether my arithmetic is incorrect or whether her arithmetic is correct; I think there are 39 - four of our universities were established in the 19th century - Sydney in 1850, Melbourne 1853, Adelaide 1874 and Tasmania in 1890. From the turn of the century to 1960 four more were established. Deryck Schreuder referred to the University of Queensland, the University of Western Australia, and then two more - the Australian National University in 1946 under an act of the Commonwealth parliament, and the University of New England in 1954. It in fact had been a college of the University of Sydney from prior to the commencement of World War II.

So there we're up to eight. From 1960 to 1986, 11 more universities were established, so that takes us to 19. You will in some things that you read about the Australian university system hear about the "pre-87 19". Maybe it's not referred to as much these days, but it certainly was during the restructuring in the late eighties. From 1987 until the present there were 18 more universities established, most of which came about from the restructuring that occurred as the result of a white paper in 1988. So that if one looks at the legislation for Australian universities, you might have the impression that we have a large number - 18, let's say, of the 39 - that are pretty recent.

I want to draw your attention to one feature. Many of the post-1987 universities actually incorporate institutions that themselves were established quite a long time ago. Take the University of Ballarat which was established

from the Ballarat College of Advanced Education in 1994 with the first act. In 1998 there was a revision to the original act of the University of Ballarat which removed a requirement that it be sponsored by the University of Melbourne and it also reflected a restructuring in the state of Victoria under which the Ballarat School of Mines, which was in the vocational educational sector, became part of the University of Ballarat. The Ballarat School of Mines was established in 1870.

What I'm saying is - and this is picking up Deryck Schreuder's comment about culture - the culture of a number of our institutions is a polyglot culture because we have under the one banner of the institutions several campuses, several institutions, with very different history. When you move from that to administration and governance, it creates a much more complex situation than exists in many of the other universities.

So much for context. Let me move to the characteristics of the enabling acts of Australian universities. Just before I do that, I wanted to refer to, when I went through the 39 universities and demonstrated how we get from the four in the 19th century up to the 39 now, what I would call three special cases: Bond University, a private university on the Gold Coast in south-eastern Queensland, which is established under an act of the Queensland parliament, but also incorporates Bond University Ltd which is incorporated under the Companies Code; secondly, there is the Australian Catholic University, which is a company within the meaning of the Corporations Law of Victoria, operates in Queensland, New South Wales, the Australian Capital Territory and Victoria; thirdly, there is the University of Notre Dame Australia in Fremantle, Western Australia, which operates under an act of the Western Australian parliament. The university is owned, controlled and operated by a body of trustees and by a board of governors.

Each one of those three - Bond University, Australian Catholic and University of Notre Dame - are special cases. If you look at the other 36 and ask the question, "Who owns the universities?" they're owned by the political jurisdiction in which they are located.

To come onto the characteristics of the enabling acts: what do the acts of the universities do? Firstly, they establish the university as a legal entity. The language in the act will say that the university is established as a legal entity, a body corporate, with perpetual succession. It has a seal. Some acts refer to the university having the characteristics "of a natural person". That's a delightful legal phrase; don't ask me what it means. Only lawyers could interpret that. It is able to sue and be sued. So the acts establish the university as a legal entity.

Some university acts go to great lengths to destabilish that. The University of Melbourne uses about 250 words and uses words that I have not previously come across - hereditaments, for example; an archaic legal expression - whereas many of our younger universities are much more direct. The University of the Sunshine Coast, for example, in southern Queensland includes this phrase: "The university is a body corporate and has a seal and

may sue and be sued in its corporate name" - end of story.

So the acts establish the university. They also go on to define the functions and powers of the university. Let me give you an example from the University of Sydney, the oldest university in Australia or the one whose act was first passed. It says, "The functions are the provisions of educational and research facilities at university standard; second, the promotion, advancement and transmission of knowledge and research; third, the commitment to the development and provision of cultural, professional, technical and vocational services to the community; and fourth, the conferring of the degrees of bachelor, master and doctor, and the awarding of diplomas and other certificates," and then there's a clause to say that it has other functions "conferred or imposed by this or any other act".

The legislative definition of "function" is perhaps one of the most significant provisions in the enabling acts of Australian universities and, I might also say, I think these legislative definitions of "function" are possibly one of the least read of all the clauses in our university acts. I suspect most vice-chancellors - and I'm reflecting my own preoccupations when I was in that role - certainly most aspiring politicians in our universities as well as outside the universities would read the material about composition and that sort of thing.

The reason I'm emphasising this material on function is that - again for the purposes of this presentation - I looked carefully at the functions. I took a subset of the universities and looked carefully at the 10 universities in New South Wales. In another presentation I've seen reference made to the fact that there are 11. The 11th is Australian Catholic University which is headquartered in Sydney, even though the act establishing it is the Companies Code in Victoria, so I apologise to Australian Catholic that it will not appear on this overhead.

I had to abbreviate those items there. I'll make some comments and tell you what they are in a moment. That snapshot there - educational and research facilities - I see that as a generic. It goes across to Sydney, University of New England, University of Technology Sydney, Macquarie and Newcastle. I do not have time to go through all of that, but what I did was I took the first five universities and then the second five. Again, I'm not going through the detail. UNSW, the University of Wollongong, CSU is Charles Sturt; UWS is University of Western Sydney; SCU is Southern Cross. Let me just say a little bit about some of those items there.

Of the 10 universities and this array of functions, there are 26 separate functions identified for those 10 universities in that one jurisdiction. Of those 26, six might be seen as generic. For example, I mentioned Sydney a moment ago - "The provision of educational and research facilities at university standard." Another is, "The promotion, advancement and transmission of knowledge and research." I won't go through the others. A further 12 are provisions that oblige the university to take account of the needs of the areas in which it is located. For example, the University of Wollongong - this one here

- has a provision in their act that says of the functions, "The provision of educational facilities of university standard, having particular regard to the needs of the Illawarra region." That's the region around Wollongong, south of Sydney. And I could repeat that for several others.

The remaining eight universities have functions which make reference to such things as special groups of students. The University of Technology in Sydney is obliged through its act to make special provision for part-time and evening students. We don't talk about evening students much any more. Many of the acts have archaic provisions in them. Other universities have provisions about modes of delivery, and refer to external students or distance education. Others refer to specific fields. The University of New South Wales is directed in its act to offer courses in the - this is good - "humane sciences and medicine". We don't talk about the humane sciences any more, we talk about humanities, and so on.

I won't belabour that any more, other than to reiterate the fact that these comments are based on only 10 of the 39 universities, but it does give some indication of the legislative basis for mission distinctiveness. Deryck Schreuder spoke before lunch about the importance of different missions in our universities and so on. We have a bit of a problem in Australia, in that most universities see their place in the sun as being a major research university. In fact, when we look at the functions, one could suggest that there's a lot of room for mission distinctiveness in the statement of functions in the legislative basis for our universities.

Let me move on to other things that the acts do. They establish the governing bodies. For example, there's usually a bold declaration in the act that the council, senate, board of trustees, or in the case of the University of Notre Dame in Western Australia, the board of governors, is established by the act. The statement of functions of the governing bodies vary substantially. The New South Wales universities are similar, and the statement will go something like this: "The senate or council is the governing authority of the university and has the control and management of the affairs and concerns of the university and may act in such manner as appears best, calculated to promote the objects and interests of the university."

In Queensland the councils, or in the case of U of Q, the statement is, "The senate or council is the university's governing body. It has the power to appoint university staff, to manage and control the university's affairs and property, and to manage and control the university's finances." In Victoria, the University of Melbourne, under their governing body functions, "The governing body may appoint staff of the university and shall have the entire management and superintendence over the affairs and concerns and property thereof," "thereof" being the university.

The University of Canberra is quite, I think, provocative in its statement of the function of the governing body: "Council has the entire management of the university." As a parenthetical remark, to go to the University of Canberra as a

vice-chancellor, as a president, with that statement in the act saying what the governing body does, I think, the very first port of call before you sign on the dotted line on a contract would be to get a pretty clear understanding with the chancellor about who was managing the university and what the governing body was doing.

The Northern Territory University: "The affairs of the university shall be conducted by the council" - even more intrusive. Here in South Australia - and you've heard reference to the report in 1995, the report on management and governance, the David Hoare report that Deryck Schreuder referred to - the acts of the three universities were modified after a report in 1996 and in each act there is the statement, "Council is the governing body whose prime responsibilities are overseeing the management and development of the university, developing and approving strategic plans and major policies, and monitoring and reviewing the operation of the university."

My point is simply to indicate to you this great variety in the way here in Australia the role of the governing body and its responsibilities are identified. The two most important powers of the governing body of any Australian university are, firstly, to appoint staff and, by implication, to appoint - and we don't usually say this - and, if necessary, to terminate the appointment of the chief executive and, secondly, the power to delegate. That's an explicit statement of the power of the governing body to delegate, because having heard these remarks about governing bodies managing the university, it simply doesn't work. There has to be a way to reconcile what is in the act and what is feasible for the governing body to do.

I know, Mr Chairman, that I'm just about out of time. What I'm going to do is truncate my presentation and simply put a table up that I think Prof Schreuder might have wanted to have up there. One of the other functions of the act is to define the composition of the governing body and to define certain offices. Let me make some remarks about that, and then I'll finish, and we might pick up topics in discussion.

This table comes from a paper by Prof Meredith Edwards who's deputy vice-chancellor at the University of Canberra and also director of the National Institute for Governance, a paper she prepared a couple of years ago on a mapping of features of university governing bodies. These figures are roughly the same as the tables that were left out on the table from Deryck Schreuder's presentation. It indicates ex officio, if we look at the final column, average in 2000; the ex officio category, people who are on councils by virtue of their office, the sector average was four; academic staff, three; general staff, one; students, two - some acts provide for one postgraduate student and one undergraduate student; parliamentarians is that figure.

New South Wales is the only state left that is adamant about retaining parliamentarians on the governing bodies. Victoria and South Australia removed that category, argued effectively that it was a redundant category. That's my personal view, which I have put to ministers and to colleagues who

serve on governing bodies from that constituency, but there is - well, when the chips are down, the acts are made by the parliamentarians so they hold all the aces, as we say in poker. Convocation, which Deryck Schreuder defined as the graduates, the corpus of graduates - one could speak about convocation, as a former vice-chancellor, through gritted teeth, I might say - is not identical to alumni, but for the purposes of this presentation probably it's best to think of it that way.

Convocation in many universities elect two; government ministerial - these are the appointed members by government - average six, and I don't know what the other category would be. The interesting thing is that, if you look at this final column, the number of members of governing bodies who are put there by the state parliament - the jurisdiction, the minister, or the government that owns the universities or whatever - are very much a minority of the total number there, so we do not have situations in Australia where the appropriate government, territory or state, or Commonwealth in the case of ANU, can actually stack or actually place sufficient members on a governing body so that they might take instructions to achieve a particular outcome. If that happens, it happens accidentally or through serendipity, rather than through deliberate action.

Chair, might I just make one more comment on another matter that the acts provide for and that is certain offices. Many universities will define certain offices, and let me just run through that quickly and then I'll cease. Some universities have provision for what is called a visitor. It used to be that the visitor was the state governor, mostly the state governor, and under certain legislation that person had certain powers and responsibilities in dispute resolution, almost an alternative to civil courts, which caused endless litigation and endless difficulties in the administration and management for universities.

Mercifully, that provision has been removed from, I think, all our university acts in Australia. It was an archaic provision that was borrowed from the UK. Many of our provisions were borrowed from the UK, and I'm not suggesting that they're all archaic. Many were, though. The visitor now has only ceremonial functions. The chancellor, as Deryck Schreuder mentioned, chairs the council. The chancellor in an Australian university has a dual function. The chancellor is chair of the council, simultaneously as the ceremonial head of the university. It is the chancellor who confers degrees in the name of the university and acts for the university in many ceremonial occasions, unlike the situation in Canada and the United Kingdom where those two functions are discharged by two different people.

There is a deputy chancellor also. I happen to be one of those. All that means is that you stand in if the chancellor is not there or, if it's a graduation day and you have four ceremonies, you usually win the graveyard shift which is the after-lunch graduation ceremony. And you also get to thank the occasional speaker, which means you have to listen to the occasional address. There's a distinguished colleague present whose address I listened to and thanked, but I have to tell you, Faith, I can't remember what it was about!

The vice-chancellor, as we know, is the chief executive officer, equivalent to president in your universities and other jurisdictions. This is a very important one: the secretary. The secretary or registrar of the university is the senior public officer - not simply the person who takes the minutes and prepares the minutes and does the agenda and that sort of thing - and has a very important role, because the secretary is obviously an employee of the university but has, in a sense, responsibility to the vice-chancellor in that he or she is an employee of the university but also has to have a major responsibility to the council. So the secretary of the university as the senior public officer often occupies very uncomfortable territory.

Chair, there are a few more remarks I might have made, but I will stop there and we can maybe take things up in discussion. Thank you very much. Sorry I ran over time.



SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

**TRANSCRIPT
OF PROCEEDINGS**

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

**FINAL REPORTS PLENARY SESSION:
ADMINISTRATION AND GOVERNANCE**

SPEAKER:

PROF ROBERT SMITH

DEPUTY CHANCELLOR

SOUTHERN CROSS UNIVERSITY

PROF SMITH: I have done two versions - well, four versions of this - two on the Acertate overhead; this one I did between the conclusion of the fourth session at 3.30 and when we started here, and I'm already aware of the fact that there are several errors. I decided, rather than to try to summarise the voluminous notes that I had from firstly, Deryck Schreuder's presentation and then the other three sessions, to see if I couldn't put down something like this that would draw out some comparisons and differences between Australia and Taiwan, especially in the area of governance. I apologise that I have not served the administration part of this section very well.

Just to start, I should say that I'm observing government protocol and I'm going with Dr Liu's figure of 154 institutions in Taiwan. I should say that there is one abstract in the book of abstracts which says there are 40 universities in Australia and I've counted them several times and I can only make 39. I stay with 39 - 37 publicly assisted and two private. I think the private figure in Taiwan is 87, from Dr Liu's paper, but I'm not absolutely certain. It's certainly two in Australia.

The third item I have there which has come out of the discussions and listening to these presentations is differentiated university system. There is certainly a very differentiated system in Taiwan. Indeed, one figure I heard in the session just before we came here was, I think, a figure considerably less than the 154 - I think it was 130-odd, which meant that the junior colleges, the two-year colleges had been deleted. In Taiwan there is certainly a differentiated system. The terms yesterday in Dr Liu's presentation identified research universities, four-year colleges, technological universities, junior colleges and so on. The phrase, which I thought would be least offensive to the substantial number of Australian vice-chancellors present, that I decided to use was "less so". I'll say no more on that.

The next block of items: individual university acts or legislation. In Taiwan there are no individual university acts, as I understand it, whereas that is the situation here in Australia. Every university must operate under an act of the appropriate state or territory legislature. Central enabling legislation: public and private, that is the case in Taiwan. We heard about the public university law and the private university law. There is no central enabling legislation in Australia. There are several acts of the Commonwealth parliament that are very relevant for our universities. I mentioned them in the presentation yesterday - the HEFA, the Higher Education Funding Act, the Educational Services for Overseas Students Act, Migration Act, the Australian Research Council Act and so on. But there is no counterpart legislation in Australia that compares with that in Taiwan.

Self-governing autonomous institutions, public: no. I think "no" is the correct tag for Taiwan. While there is a great expectation, as I understand it, in Taiwan about what will come out of the current review of legislation, I think "no" is the appropriate tag there, whereas it is "yes" in Australia.

Self-governing autonomous, private: I think that the appropriate descriptor is "yes" for Taiwan and it's certainly "yes" for Australia. Then I've added this

final column in governance review in prospect: I think it's "yes" in both our countries. We had from Dr Shergold yesterday, the indication there would be governance as one of the topics. I think he said there would be - what was it? "A spirited controversy" or some phrase like that.

Coming down to the third block: governing bodies - and I will use GB for economy of words - public, "no" for the public universities in Taiwan, "yes" for Australia. Governing bodies for private universities, "yes" in Taiwan and "yes" in Australia. This is where I get into a bit of trouble - governing body size - this really refers to the private universities in Taiwan. These are very good statistics - this is an N of 1, which is a pretty good basis for generalisation when you're at my stage in life. 15 to 25, I think, was the figure I picked up, whereas in Australia there are about 18 to 35, give or take a few here and there. Remember that GB size refers to the private universities in Taiwan. The GB composition also refers to the private universities in Taiwan because there are no GBs for the public universities. I think in both cases external members - members external to the university - predominated in both Taiwan and Australia.

The next block: GB chair. This refers to the private universities and I simply should not have "president" in there. I'm not sure what the appropriate - I think the chair is external. I've been down in the business centre operating on an IBM compatible and I'm a Macintosh person, so I think I've done pretty well to get this up here, actually.

Policy management distinction: clear. I think "no" in both our countries is what I picked up from our presentations; "policy management" meaning governing body in the private universities in Taiwan, governing bodies in the private and public universities in Australia. Is there a clearly understood distinction between policy at the governing body level and management issues at the executive level? I think I picked up from the Taiwan presentations there is some confusion there. I'm extrapolating a little here possibly from my own experience, but also from what I hear from the occasional vice-chancellor conversation and I think it's appropriately "no" for Australia.

Then the internal council - this is the celebrated - what was it? The celebrated 305 figure. I realised I think the nearest counterpart for the Australian universities is the academic board, although I'm not sure. But I figured we couldn't have this session without referring to the 305 figure, and you'll notice that I've sort of used capitals there and a couple of explanations - large in Taiwan; varies in Australia.

Finally, independent quality agency: that should not be "yes". I think it's a prospective hope, as I understand it, that there will be an independent quality agency in Taiwan. With that, I will conclude.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月8日（星期一）

專題討論

行政與管理之法規架構

演講者

南十字星大學董事會副主席

ROBERT SMITH 教授

謝謝你，黃教授。其實我已經退休，只是位榮譽退休教授，不再是執教鞭的教授了，我也不確定自己是不是真的曾擔任過教授，這些日子來我總稱自己是個老地理學者，上了年紀的校長。雖然我擔任過這些職位，但是早就退休了。說實在話，我真的是跟不上時代了，可是我對大學管理一直深感興趣，所以才能繼續在新南威爾斯州北部的南十字星大學負責行政管理工作。因此，今天能有機會向大家談論澳洲大學的管理，我倍感榮幸。

老實說，在準備此次演講時，我一直在考慮如何利用大學法資料，完成一篇短短二十分鐘的演說。至少在澳洲，大學法規不怎麼有趣，你不會在睡前看完後放在枕頭下或床鋪邊。如果大白天一起床就讀這些法規，我保證你一定很快又會睡著。不過，我試著針對澳洲大學法規，整理出一些管理特色。黃教授，我在管理上的評論可能會多過於行政方面，所以若有何不足之處，我們也許可以在討論時間提出來研究。

我今天演講的大綱會著眼在立法背景、權力授予法特色和管理行政方面。首先由背景開始，也就是三個主題中的第一個。我想早上 Shergold 博士也談到，在澳洲，「大學」一詞受到澳洲所有司法權保護，受到公司法規和商務名稱法規保護。因此，任何稱為大學的機構皆必須通過立法認可，經過適當的議院決議後才能正式成立。所以「大學」的成立在澳洲需要有相當的條件才行。我相信大部份的人都知道，在美國「某些」司法權裡，只有少部份而並非所有機構皆需要經過相同的限制才可成立。

第二，在澳洲的權力授予法方面，聯邦、州或當地政府都扮演著重要角色。此點是第一點的延伸，但是我們必須瞭解大學管理法通常由州或當地制定，例如北領地和澳洲首都行政區，而澳洲國立大學必須通過澳洲聯邦議會許可，才得以成立。

第三，根據澳洲憲法，教育是州或領地政府的責任，而非聯邦議會的職責。聯邦的責任是提供高等教育補助金，但得先與各州協議，根據憲法特定條款，再將資金直接由聯邦財政部撥給大學。我認為應有條款明定補助金須由政府國庫支付，但是法律卻明定補助金須由聯邦直接撥給州政府，此為澳洲法律的一項特色。

第四條背景：在澳洲至少有四項系列聯邦法規相當重要。除了支配州政府的權力授予法之外，至少還有四項系列聯邦法規。第一為「高等教育撥款法案」，或簡稱為 HEFA 法案。根據此法案，資金由聯邦政府撥給大學，所有的重要文件呈交和學校機構計劃表都必須以 HEFA 法案為依規。澳洲只有二間私立大學，若

您的學校為私立大學或您想在澳洲成立私大學，目前資料上有些學校表示有興趣，在會議或其他座談會討論的重點應該為：「我們如何使自己納入 HEFA 法案？」。

第二項重要的系列法規為「海外學生教育服務法案」(the Education Services For Overseas Students Act)，或簡稱 ESOS 法案，目的在於保障海外學生到澳洲後能學有所值。此外，「移民法」也提供大學招募學生到澳洲就讀的方法。第四項重要系列法規就是之前會議中所提過的「澳洲研究委員會法案」。此法案使澳洲研究協會成立為一個獨立的機構。我應該再加入第五項系列法案，就是「國家衛生與醫學研究委員會法案」，但是我想大家大概也都聽過了。

關於最後一條背景，我會將這個主題以年代來敘述。我只想說，所有三十九間大學中，我也看過書上的摘要提及有四十間大學，我必須問一下寫摘要的作者，看看是我算錯，還是她對，不過我想是三十九間大學。澳洲有四間大學於十九世紀成立，雪梨大學在 1850 年成立，墨爾本大學在 1853 年成立，阿得雷德大學於 1874 年成立，塔斯曼尼亞大學於 1890 年成立。從那時到 1960 年，澳洲又成立了四間大學。除了 Deryck Schreuder 教授曾提到的昆士蘭大學，西澳大學，還有另外兩間，一是在 1946 年通過聯邦國會法案而成立的澳洲國家大學，與 1954 年成立的新英格蘭大學。其實在第二次世界大戰前，新英格蘭大學原本只是雪梨大學的一間學院。

現在我們提到了八間大學。從 1960 到 1986 年，又相繼成立了十一間大學，現在一共提到十九間大學了。也許大家曾讀過有關澳洲大學的體系，聽過 “pre-87 19”(1987 年前成立 19 間大學)。或許現在已經很少提及，但是在八零年代晚期的重整期間，卻是重要根據。從 1987 年至今，又多成立了十八間大學，其中大部分是於 1988 年發佈「白皮書」之後的重整時期所建立。因此，若查一下澳洲大學法，大家也許會感到驚訝，因為我們居然能在近代這麼短的時間內，成立這麼多的大學—三十九間中就有十八間在此時期成立。

我希望大家能注意到一點，許多於 1987 年後建立的大學，其實是早期成立的機構的分部，都是很早成立的機構。以巴拉雷特大學(the University of Ballarat) 為例，此大學的前身為巴拉雷特高級教育學院 (the Ballarat College of Advanced Education)，因 1994 年建立第一項法案而升為大學。在 1998 年，巴拉雷特大學修改了原來的法案：刪除須由墨爾本大學監管的規定，並反映出維多利亞州的重整情況。在重整作業之下，原本屬於職業教育部的巴拉雷特礦冶學校(Ballarat School of Mines)，納為巴拉雷特大學的一部分，巴拉雷特礦冶學校則早在 1870 年就已經成立。

根據 Deryck Schreuder 教授對於文化的評論來看，澳洲有些機構的文化算是多重文化，因為在這些機構相同的號召之下，澳洲成立許多學校及機構，但各自有各自的歷史。當大家將注意力由這些歷史轉到行政和管理，就會發現情況更複雜。

背景的部分就講到這裡，現在我要談談澳洲大學權力授予法的特色。在進入這個主題之前，我必須先提一件事。當我提及這三十九間大學，說明澳洲在十九世紀是如何將僅四間大學，增加到目前的三十九間時，我發現了三件特例：位於昆士蘭州東南方黃金海岸的私立邦德大學，在通過昆士蘭州議會法案而成立的同時，也組成了邦德大學有限公司，屬公司法規管理；第二件，澳洲天主教大學為一間公司，依維多利亞州公司法管理，在澳洲新南威爾斯州、昆士蘭州、首都行政特區和維多利亞州營運；第三件，在西澳州費里曼圖的聖母瑪莉亞大學，遵照西澳州的議會法規經營，由董事會和理事會所擁有、管理和經營。

這三件例子，不論是邦德大學，澳洲天主教大學和聖母瑪莉亞大學，都算是特例。若你們查看其他三十六間大學，問：「誰擁有這些大學？」這些大學都受當地政治司法權管轄。

要了解權力授予法的特色，得先了解：「大學法是做什麼的？」首先，這些法案讓大學合法成立。法案內容是說，大學成立為長期經營的合法實體，經過正式批准，屬於法人團體。某些法案表示大學擁有「自然人」的特色。這句法律用詞真是太棒了，不過別問我什麼意思，只有律師才能解釋清楚。這代表了大學可以提出訴訟，也有可能成為被告。總而言之，大學通過了這些法案才能成為合法實體。

有些大學法在人們不遺餘力之下，才制定出成果。墨爾本大學採用了約 250 個字，甚至使用一些我之前未曾見過的字，例如世襲財產，一句古式的法律說詞，不過澳洲許多近代大學使用的詞句則較直接。例如昆士蘭州南方的陽光海岸大學的法案中，包括了此句：「大學為法人團體，經過合法批准，得以公司名提出訴訟，或受到控訴」，就是這樣。

因此，法案使大學得以成立，而法案同樣也為大學的功能與能力下定義。讓我以雪梨大學為例。雪梨大學是澳洲歷史最悠久的大學，同時此大學的法案也是首先取得認可。法案內容為：「大學功能為提供符合大學標準的教育及研究機構；第二，要提昇、增進以及傳授知識和研究；第三，保證能發展，提供文化、專業、技術和職業技能，為社會服務；第四，授予學士、碩士和博士學位，授予文憑和其他證書。」之後還有一條條款說明大學其他的功能：「由本法案或其他

法案授與或執行。」

「功能」在法規中的定義大概是澳洲大學的權力授予法中最重要的一項法條，我認為鮮少有人會去注意「功能」在大學法上的定義。我猜想大部分校長人，包括我自己之前擔任校長的時候也一樣，還有校內外活躍的政客們，很少人會去閱讀法案組成資料和其他相關資料。

為了此次演講，我很仔細地查看過這些功能，這也是我演說內容一直在強調功能的原因，我仔細選了位於新南威爾斯州的十間大學做為參考。在另外一場演講中，我看到參考資料上說其實新南威爾斯州有十一間大學，第十一間是澳洲天主教大學，其總部在雪梨，不過那所大學所採用的法案是維多利亞州的公司法，因此我在此向澳洲天主教大學致歉，因為今天我不會提到該校。

我之前必須縮短一些有關大學功能的細目。我待會兒會先做一些評論，再告訴你們這些細目。簡要說明，我將教育和研究機構視為一般功能。以雪梨大學、新英格蘭大學、雪梨科技大學、馬奎里大學和紐卡素大學為例。我沒有時間談論全部，不過我之先是先說明前五間大學，再談後五間大學，我今天一樣不會談論所有的細節。UNSW 代表臥龍崗大學(the University of Wollongong)，CSU 是查爾斯德大學(Charles Sturt)，UWS 為西雪梨大學(University of Western Sydney)，SCU 是南十字星大學。在此我就只提一些關於功能的細目。

在同一管轄區域的十所大學中，就各擁有二十六項不同的功能。在二十六項功能當中，有六項功能為一般定義。例如，我剛才提及的雪梨大學，其功能為「符合大學標準之教育與研究機構」，並「提升傳授知識及研究」。我不再談其餘五項功能定義。還有十二項功能為規範「大學必須以校地所在區的需求為優先」。例如，臥龍崗大學就有規定：「符合大學標準之教育機構必須以 Illawarra 區的需求為優先。」Illawarra 位於雪梨南方，臥龍崗市附近的區域。我還可以再舉出更多類似的例子。

另十所大學皆以特殊學生團體為主，定義其功能。雪梨科技大學就必須依據法令規定，為兼職學生及夜間部學生訂定特別規定。在此我不多討論夜間部學生的事情，因為許多法令都作了修改。有些大學則有為外校及遠距教學學生規定學習傳送模式。最後，也有些大學必須對於特定領域訂定相關規定。新南威爾斯大學就必須根據當地法令，開設「人道科學及醫學」一課。在此，我不再討論人道科學為何，而是何謂人道等相關知識。

我要重申以上評論是根據澳洲三十九間大學其中的十間大學整理而來，我

不願再多談細節的部分。然而，以上評論卻可反應出立法基礎的特殊性。上午 Deryck Schreuder 教授曾談到大學定義不同功能的重要性。澳洲各大學都認為自己才是主要研究大學，但事實上，回顧以上功能定義就不難發現到：大學立法基礎的特殊性仍有許多發展的空間。

接下來要談談法令相關事物。法令構成管理的主要部分，例如，法令裡通常會有一段聲明，宣告董事會、理事會、基金會、或西澳聖母大學的管理委員會，皆因法令因應而生。管理主要內容之功能定義皆有不同。例如新南威爾斯大學的管理法令均很相似：「本大學授權理事會或董事會有管理本校，享有管理及掌管校務的權利，以本校需求為優先做出決策，發揚學校宗旨，尋求學校利益。」

昆士蘭大學對董事會的相關規定如下：「理事會及董事會為本校之管理單位，擁有聘任大學職員、掌管本校事務及校產、及管理本校財務之權力。」維多利亞州墨爾本大學之管理規定如下：「本校管理單位有權聘任教職員工、並應全權管理監督本校校務及校產。」

我個人認為坎培拉大學的功能管理規定反而很模糊：「董事會可全權管理本校一切事務。」附帶一提，我認為若欲至坎培拉大學就任校長或校長一職，在簽定契約時，必須先看清楚誰有權力管理此校以及主要管理內容為何。

北領地大學的規定更模糊：「本校一切校務應由董事會全權處理。」。在南澳，1995 年 David Hoare 曾針對管理統治提出一份報告，此份報告即為 Deryck Schreuder 理論之參考。1996 年報告結束後，此三所大學的規定均已修改，而在每項規定裡都多了一項聲明：「董事會即為本校管理單位，主要職責為監督本校管理及發展狀況、許可重要計劃、落實主要政策、並監控審查本校運作狀況。」

在這裡我只是想點出澳洲管理單位的角色及職責之間的多樣化。澳洲大學管理單位最重要的權力為二：(一)聘任教職員工，及在必要時解聘主要職員；(二)代表權。管理規定內對代表權之解釋非常詳盡，因為口說無憑，所以必須要有周全的記錄管理規定的詳細內容以及管理單位的職責及職權何在。

主席，我知道我的時間快到了。接下來我將以圖表解釋，縮減演說時間，Schreuder 教授應該已經準備好要上台了。法令其中之一的功能為定義管理單位的組成及固定職務。等我做完解說，我的部份就可以結束。各位若有疑問可以在討論時間提出問題。

這份圖表是從坎培拉大學副校長 Meredith Edwards 教授的論文截取出來，

她幾年前寫這篇論文的主要目的為探討大學管理內容之特色。圖表上的數據大約與 Deryck Schreuder 教授演講時的圖表數據大致相同。請看圖表最後一欄，為 2000 年時的管理席位之平均值；依過去職位來看，董事會的平均值為 4，教職員工 3，一般員工 1，學生 2。有些規定要有一位研究部學生及一位大學部學生代表，如此組成大學管理的議會。

新南威爾斯州是全國唯一仍執意在董事會裡安插議會成員的州，維多利亞州及南澳早已不將議會成員納入管理單位的一部分，因為這只是浪費人力資源罷了，我已將我的觀點告知給管理單位所有行政者及同事。但是當我們籌碼用盡時，也只能讓議會成員訂定規定，因為他們手中總是握有王牌。Deryck Schreuder 教授認為畢業生與校友的代表性並不相同，做為一位前任校長的立場而言，也許這種想法是比較好。

許多大學會推舉兩位召集人，一為管理單位指派之管理行政者，平均值為 6。至於另一種方式為何我就不得得知了。但有趣的是，在圖表最後一欄中，由州議會、司法、部長、或者擁有此大學之政府等指派管理單位成員人數僅占少數，因此在澳洲，政府、特區、州、或聯邦並不會真的指派足夠的人員至管理單位，好讓他們在大學裡達到某種特定目的。若真有以上情況發生，則必定是巧合或者意外，決不會是透過深思熟慮才下的決定。

主席，請容我再針對提出法令之目的及其固定教職員提出評論。許多大學會界定固定教職員為何，所以讓我很快地解釋界定內容，然後就可以結束此次演說了。有些大學有所謂的「訪客」規定，以往是由州總督為「訪客」，並在特定法令下，擁有調解糾紛之權力及責任。「訪客」就像是地方法院一般，為大學調解永無止盡的行政管理訴訟及困境。

幸好現在此條規定已不包含在澳洲各大學規定之中。此規定是仿效英國，而事實上，澳洲有許多規定都是仿效英國而來，但並非全部規定都古板不堪——雖然大部分規定都很古板就是了。「訪客」現今只剩下形式上的禮節功能，正如 Deryck Schreuder 所說，董事會有董事會主席，澳洲大學的董事會主席有二項主要的職務：一為主持董事會運作，二為主持學校儀式。董事會主席有以學校之名授予學位之權力，並代表學校出席所有的儀式場合。不像加拿大及英國，這兩項功作分派給不同的人去做。

當然也有董事會副主席，我正巧就是副主席。這表示，若主席不在你就要代理他的位子，或在畢業典禮多的時段，你會有四個畢業典禮要參加，而且通常是在午餐後舉行。此外你還得對講者表達謝意，即表示你得注意其演講內容。剛

才我很注意聽一位同事的演說，可是老實說，Faith，我完全記不得妳講了什麼！

我們都知道，大學校長就如同執行長，同等於各大學中或其它系統單位的總裁。還有一位非常重要的人物：主任秘書。大學的主任秘書或註冊主任就如同高層公關，不只是登記以及準備會議記錄等其他事情。主任秘書扮演極重要的角色，因為主任秘書是大學的雇員，但就某種角度來說，他（她）受學校僱用，必須聽命於校長，同時也得對董事會負責。所以一般大學的主任秘書，如同高層公關，其工作範圍都不太討喜。

主席，我也許已經多談論了一些事，但我想就到此結束，或許其他可以在討論時間中再提出來研究。很抱歉我耽誤了時間，謝謝。



**TRANSCRIPT
OF PROCEEDINGS**

SPARK AND CANNON

Telephone:

Adelaide	(08) 8212-3699
Melbourne	(03) 9670-6989
Perth	(08) 9325-4577
Sydney	(02) 9211-4077

AUSTRALIA TAIWAN CONFERENCE ON HIGHER EDUCATION

RADISSON PLAYFORD HOTEL, ADELAIDE, SOUTH AUSTRALIA

TUESDAY, 9 APRIL 2002

OFFICIAL CLOSING

SPEAKER:

PROF GAVIN BROWN

VICE-CHANCELLOR AND PRINCIPAL

THE UNIVERSITY OF SYDNEY

PROF BROWN: It's a great privilege to have a role in the end part of this conference. I have to apologise because, due to academic governance, I was unable to come until today. There was a meeting of my governing body last evening and it is more than my life is worth to have missed this occasion.

These meetings are unquestionably very good, I could tell. I congratulate the organisers - and Ian Davey in particular - on putting together all of these impressions in the last session because it meant that a latecomer like myself could have a Reader's Digest condensed version of your conference, which was enormously valuable. But it also showed what is rich about an occasion of this kind, because as well as exchanging information, I believe that one learns a great deal about oneself and one's own system, by having these interchanges. So that it's not just a question of us learning about Taiwan, I think it's a question of us learning about Australia.

I'm sure that for you also, part of the experience is not just learning what we are doing in Australia, but by thinking through these things, learning more about what you are actually doing yourself in Taiwan. So there is a great value, I think, in these meetings. It's not only a value at that level, though. While obviously it will be useful to continue to have meetings with very important people like presidents and vice-chancellors, the real business of cooperation between the two countries will come at the level of individual academics, individual researchers who are working together, and individual academics who are doing things in the teaching and learning area. We must never forget that as well as having these summits, the purpose of them and the benefits which come through them can often be providing a pipeline so that the real people who are doing the real work in our universities can get together as well. So please don't forget that as a possibility.

There are just a very few impressions that I have, from what I heard. There are some obvious differences between the education systems in the two countries, but there are some very, very similar external pressures. Everywhere I visit in the world I see a change from the formerly more or less elite higher education system to one which is driven by a desire for much more mass education. This is placing considerable stress on the systems. It's placing considerable demands, not just on the people who are organising the universities, but also on the governments. Although sometimes at universities we like to think of the government as an opponent in some sense, and we get frustrated from time to time by regulation or by other kinds of interaction, the truth is that governments are working extremely hard also to find ways to adapt to what are the modern demands placed upon higher education.

We are about to have a major higher education review, as you know, in Australia. I understand that there is significant legislative change about to take place in Taiwan. Both of these things will be very important. It seems to be quite different in the sense that we have a tradition of very considerable individual autonomy for institutions, and you have a tradition of a much more coherently government centralised system. But I believe there is very considerable convergence and, again, this is a convergence that you see

wherever you look in the world.

The convergence in this case is that, with us, there are increasing demands for various kinds of transparency and accountability and these government reporting requirements, in a sense, alter the shape of autonomy. It is also true that such funds as we do receive from government are increasingly coming for special projects which are important marginal funding for us, but they do actually require matching funding from the institutions. They require us, in a sense, to devote a very large number of resources therefore to these particular projects determined by government, and in a sense detract from our capacity for strategic planning in an autonomous sense.

On the other hand, I understand that in Taiwan the government is keen, in a sense, to encourage the universities to take more direct responsibility for the success of their outcomes. So, in a sense, there will be a measure of more autonomy probably, as part of the legislative changes. So, as I say, there is some convergence in the two systems, because the meaning of autonomy is being changed in this country. I think the meaning of government control is being changed in your country, and we are converging to a similar position.

All of these things, I think, are very, very useful to us because working as we do in universities, we must believe in a continuous learning process. What we've been going through in the last two days is a shared learning experience, and I think it's very, very valuable. I really do thank most sincerely the organisers for making it possible. Thank you.

第一屆中澳高等教育會議

南澳，阿得雷德，RADISSON PLAYFORD HOTEL

2002年4月9日（星期二）

閉幕演說

演講者

雪梨大學校長

GAVIN BROWN 教授

很榮幸能參與此次會議的閉幕式。很抱歉因為敝校行政工作的關係，先前的會議我趕不及參與，實在很遺憾我沒能趕上昨天下午那場關於行政管理的小組會議。

毫無疑問地，我們的會議非常圓滿。我要恭賀主辦單位，特別是 Ian Davey 教授，使得最後這個場次的進行如此成功，令人讚嘆。這讓像我一樣晚到的人，能夠有機會掌握整個會議的精華，實在十分寶貴，也顯示出這類會議的重要性。透過交換資訊和互動，我認為我們都可以從自己和所處的體系中學到很多。我們不僅對台灣的現況有所認識，對澳洲的情況也能有所瞭解。

我相信此次的會議不僅是讓大家瞭解澳洲的高教系統。在互相觀摩後，也更能夠瞭解目前各位在台灣所做的努力，我相信這樣的會議讓大家受益匪淺。僅管重量級的人物像是董事和校長等的往來會議非常重要，然而兩方真正的合作應該由各個學術單位、研究人員以及在教學上實際參與者的交流落實做起。希望此次會議能拋磚引玉，讓各校的交流能更頻繁，特別是參與實際校務運作的人員交流更是重要。

我對此次會議的感想是，台灣和澳洲的教育系統有顯著的差異，但是外來的壓力卻是一致的。我到訪各地大學時常見到所謂的精英制高等教育轉變成更多人期望的大眾普及教育，這對制度本身相當多壓力，而學校人員和政府也都備感壓力。雖然有時候大學對政府法規或與政府互動感到挫敗，難免把政府當成對手；事實上，政府也非常努力想找出方法因應目前對高等教育的要求。

如同各位所知，澳洲高等教育即將進行重大改造，我也知道台灣也將經歷大幅度的立法改變，這是非常重要的演變。我們的制度基本上不太一樣，在澳洲傳統上各校有相當程度的自主權，在台灣則較傾向政府集權管轄。不過兩種系統似乎逐漸走向一個兼容並蓄的制度，這也是目前世界各地的趨勢。

所謂的兼容並蓄制，就是有更透明化的責任規屬，對職權的劃分及分層負責有更多的自主權。雖然政府對大學所提供的研究計畫補助越來越多，對我們而言是豐厚的資助，但是大學同時也得自籌相同數額的款項，才能獲得補助。大學為此得花不少人力物力以投政府所好，當然多少會影響我們在自主權下的策略計畫力。

另一方面，我知道台灣政府積極鼓勵大學自主，所以，大學在立法改變後會獲得更多的自主權，這就是我所認為我們兩種系統正匯集走向一個兼容並蓄的制度。因為在澳洲自主權的意義已經有了改變，在台灣由政府控制也有了改變，我

們正同時改變匯集走向一個相同的立場。

對我們而言，了解這些同異頗有助益，因為我們相信教育是永續的學習過程。過去兩天分享學習經驗十分寶貴，我誠摯地感謝主辦人員的努力，讓大會能夠圓滿成功地舉行。謝謝各位。

附錄二：海外學人「第一屆中澳高等
教育會議的啟示與願景」原
文



第一屆中澳高等教育會議與臺灣代表

▲第一屆中澳高等教育會議與臺灣代表(左起)：元智大學校長曾世弘、教育部次長呂木琳、禮林德爾斯大學校長 Anne Edwards、台大校長陳維昭、雪梨大學校長 Gavin Broome、新英格蘭大學校長 Ingrid Moses 及國際文教處李振濤處長。(陳東榮攝)

文 李振濤 陳東榮
張國保 周明華

別開生面的國際學術盛宴

澳洲與台灣在近幾年來，以雙方互重為主軸，積極地推動實質的關係，並著有成效，尤其在學術、文化、教育、科技與經貿關係方面的提昇，更是顯著；兩國產官學界也因而透視到未來進一步合作的願景。「第一屆中澳高等教育會議」(The First Australia Taiwan Conference on Higher Education)的順利舉辦，就是其中最好的例子。

由澳洲聯邦教育部、澳洲大學校長委員會(Australian Vice-Chancellors' Committee)及臺灣三所大學共同籌畫並主辦的第一屆中澳高等

教育會議，於今年(二〇〇二)年四月七日下午，以隆重的歡迎酒會展開序幕。阿德雷德市長黃國慶(Air-Reg Huang, Lord Mayor of Adelaide)在市政大廳舉行盛大酒會，歡迎所有與會代表，我駐澳代表處楊進派代表亦在會中代表我方致詞。八、九兩日全天進行既精采又充實的學術會議，十日主辦單位邀請我方代表參觀位於阿德雷德市的南澳大學(University of South Australia)、阿德雷德大學(Adelaide University)及福林德斯大學(Flinders University)三所高等學府，會議也於此後，正式圓滿結束。

正式會議時間雖然只有短短三天，但台灣雙方校長及相關工作人員，卻花了長達兩年的時間，溝通、互訪及籌備，個中甘苦，相信只有真正投

▲中研院長李遠哲(左三)，接受新南威爾斯大學(University of New South Wales)榮譽博士學位，與該校董事會主席余榮業醫師(Dr John Yu, AC)(右三)及呂木琳次長(右二)、駐澳代表楊進派(右一)、國際文教處長李振濤(左二)、文化組陳東榮組長(左一)等人合影。

(澳洲自立媒體記者周弘理攝)

入的人員，感受最為深刻。其用心、認真、傾情，使人會順利圓滿成功，殊值敬佩。另外，這場深具時代意義的中澳高教精英會議，亦有許多值得稱讚之處：如加強中澳雙方友誼、促進雙方對高等教育制度的認識與了解、增加我大學校長參加國際會議之經驗、交換辦學理念與領導心得、觀摩澳洲大學校園規劃與經營管理經驗、共同探討高等教育品質的問題並研擬解決與發展方向、奠定我國高教國際交流的根基等，這些都值得大書特書。會議的主題「品質保證與追求卓越」(Quality Assurance and Pursuit of Excellence)，更是意義非凡，深具時代意義。

增進中澳學術交流與友誼

本屆會議係由澳洲政府主動邀請我國十七位大學校長、二十餘位學者專家，及新嘉坡呂木琳次長、高教司代司長張國保、技職司專門委員周明華、國際文教處李振清處長、房廣靖秘書、駐澳代表處楊進添代表、文化組陳秉榮組長和秘書團團長、駐墨爾本辦事處梁英彬處長等多人，赴南澳參加此次國際會議。我中央研究院李遠哲院長也以澳國貴賓身分訪澳，並

在會中發表專題演講。

為表示誠意，澳洲聯邦教育、科學及訓練部(Department of Education, Science and Training, Australia)，補助籌辦單位六萬澳元以為贊助。會議期間更指派該部九位人員全程參加及陪同。教育部次長P. G. G. Sheehy博士也親自出席會議，發表專題演講，顯見澳洲政府對本次會議的重視。最令人感動的是福林德斯大學於呂次長率團參訪該校時，主動在校門口升起我國國旗以示歡迎。我國駐澳代表楊進添先生及文化組陳東榮組長、陳國珍秘書，除會前與澳方多所溝通協調外，會議期間也都全程參與。中澳雙方與會人員在會議期間非常愉悅自熱的溝通聯繫，對強化中澳雙方高教友誼，奠定良好的根基。此外，南澳地區的台灣僑界與留學生，對於為數眾多的校長來澳開會倍感興奮，並熱誠地接待。整體言之，我方代表團及駐澳同仁在會前、會中及會後的表現可圈可點，亦為一次相當成功的學術外交出擊。

兩天的正式會議中，中澳雙方編流擔任開幕、閉幕、分組討論議程之主持人，引言人則由雙方人員共同擔任。而其中最精采的是，大會安排的分組討論，分為研究、教學、行政三

大議題，每一議題各有三場之討論主題，每一討論主題都有一位主持人、二位引言人，加上各組的總結報告主持人、引言人，中澳雙方校長幾乎皆有機會擔任主持人或引言人。如此用心的安排，校長們可就各自的高等教育制度作詳細的介紹、探討並交換心得，而透過熱烈的討論後，亦可促進雙方的認識與了解。

我國大學校長都有個別或少數人一起出國參加國際會議的經驗，但一次組團超過三十餘人的經驗應是首次。多位校長表示，中澳高等教育會議提供校長及大學相關主管人員提供出國參加國際會議，實屬難能可貴。而應大會邀請擔任主持、引言的校長們，會前即須準備國內高等教育相關資料，並以投影片、PowerPoint及英文呈現。我國大學校長及學者們的認真積極，不但提高了會議品質，贏得澳方良善的回應，更有助於校長們未來出席國際會議的實務經驗與心得。

由於主辦單位的精心策劃與用心安排，會議期間有許多場(次)的雙方交流與聯誼機會。如四月七日的開幕酒會、四月八日澳方的歡迎晚宴、四月九日的校方校長答謝晚宴等，所有校長們均有許多時間面對面的溝通與接觸。在氣氛良好的環境下，一方

面增進彼此友誼，另一方面也交換辦學理念與心得。三天會議的上、下午均各安排一場茶敘，中午則以簡便自助餐方式，讓與會人員在會場內外，三五成群的聚在一起討論、交換教育理念、辦學經驗及領導心得，是此次會議另一意外的豐富收穫。

觀摩澳洲大學經營管理

澳洲面積為台灣的二百多倍大，共有六個州及兩個特區。此次會議開會的地點在南澳州首府阿德雷德市，該市共有三所大學，各有不同校區。主辦單位於四月十日邀請我方人員參觀該三所大學總校園或具有特色之校區。各校概況略述於下：

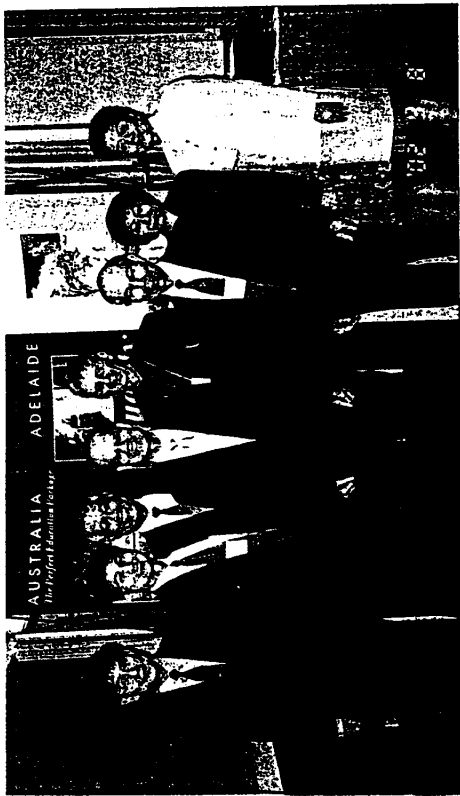
(一)南澳大學(University of South Australia)：一九九一年才由數所學院合併而成，共有六個校區，分散市區或市郊，是南澳州最大的大學。學生人數大約兩萬五千人，包括大學部二〇、一〇〇人，研究生約四、六三八人，外國籍學生四、三七七人。除有各種不同系所之外，該校還有兩個頗具特色的研究中心：電子區域網路研究(The Institute for Telecommunications Research)及Ian Mark Research Institute。南

澳大學極重視國際學術交流合作，與廿七個國家的七十五所大學連結成學術網，提供學生各種不同的學習機會。該校亦重視教育品質，業已獲ISO9001認可轉移通過。

(二)福林德斯大學(Flinders University)：建於一九六六年，全校一三、二〇〇學生，大學部一〇、八〇〇人，研究生二、四〇〇人，其中外國籍學生二、四〇〇人，來自七十個國家。該校為推動國際交流以及招募外國籍學生，設有國際服務處(International Office)，有八位專職人員。該校學術單位分設工程(Science & Engineering)、衛生科學(Health Sciences)、社會科學(Social Sciences)、人文學(教育、一般人文學科、法律和神學)等四個學院(Faculties)，研究表現(Research Performance)相當卓越。福林德斯大學全校約有一、六〇〇名教職員，其中八〇〇人係屬研究與教學的學術人員(Academic Staff)，學術人員中有卅二%專職研究(Research Only)，其比例在澳洲卅九所大學中名列第六。全校圖書一百六十萬冊，電腦超過一千部，該校設有學生學習中心(Student Learning Centre)，負責學生的英語教學頗具

特色。

(三)阿德雷德大學(Adelaide University)：創立於一八七四年，是澳洲頗具歷史及學術聲望的大學之一。共有四個校區，設有資訊工程及數學學院、衛生科學院(Health Sciences)、人文社會科學學院(Humanities and Social Sciences)、專業學院(The Professional Schools)(含法律、商業、管理、教育、建築、老人照護等)、科學學院(The Sciences)等學術單位。全校學生一四、〇〇〇人，外國籍學生二、〇〇〇人，來自七十個國家，佔全校學生七分之一。教職員二、二五〇人，包括職員一、〇九五、教學及研究人員七二〇人、專任研究人員四三五人。該校人才輩出，曾有廿六位諾貝爾獎得主，二〇〇一年即有廿六位獲得全澳及國際的學術獎項。該校研究成果卓越，設有十五個合作研究中心、三個國家研究中心、廿四個全校性之研究中心、及十二個各學院設立之中心。研究的優先重點為農業科學、環境科學、衛生及生物醫學、化學及地球科學、工程、電腦資訊、數學及理論物理學、自然及太空科學、人文社會學等領域。該校雖屬公立大學，學雜費收費標準每年約在二七、



○○○(醫學)至二二、○○○(社會科學)澳元之間。與之相較，我國公私立大學學雜費收費仍屬偏低。

探討高教問題及解決方向

此次會議討論的主題是「品質保證與追求卓越」，分研究、教學及行政三組討論。研究方面又分「研究成果商品化」(Commercialisation)、「生物科技」(Biotechnology)及「資訊及通訊技術科技」(Information and Communication Technology)三個子題，教學方面分為「國際化」、「網路學習」(Online Learning)及「終身學習」三個子題；行政則分「立法架構」(Legislative Framework)、「品質保證」及「公立及私立」三個子題。各子題都是現今最重要的高等教育問題，與會校長及代表們均熱烈討論如何提升大學教育品質，交換追求卓越表現之方向，並於總結報告中研擬出中澳雙方

方高等教育之比較，分析彙總彼此可再努力之具體建議，中澳雙方均有豐富的收穫。

會議引發的迴響與願景

中澳雙方籌備本會議的同時，即約定二〇〇四年由我國邀請澳方代表來古參加「第二屆中澳高等教育會議」。為加速雙方交流、落實本會議之推動與執行，研商第二屆會議之舉辦方向，四月十日上午，我國立大學校院協會代表(劉米漢校長及陳維昭校長)、及私立大學校院協進會理事長劉顯復校長等，與澳洲大學校長委員會之代表，假南澳大學會議室舉行工作小組會議。此外出席人員於會議中所建立的情誼，已有多校相互邀訪，也有不少與會學校為進一步建立合作、交換師生、姊妹學校等可能。凡此種種，在我國加入WTO之後的今日，適可為我國高教國際交流之根基，為加速大學國際化往邁進一步。

中澳雙方正式接觸之後，讓我們感受到國內大學的國際交流不足，出國經費有限、多數學校迄今尚無設立國際交流單位或人員之機構，英語教學環境不良，致招收國際學生相當不

▲圖上：澳洲雜誌 Campus Review

副主編 David Myers (右四)，專訪呂木琳次長(左四)及教育部同仁。(Robert Stevens 攝)

圖上左即為該雜誌報導。



茲說明如下：

① 多提供人員出國交流機會

常言道，「百聞不如一見」；又「他山之石，可以攻錯」。大學的辦學成效必須經得起國外大學的競爭、比較與挑戰。國外的良法美制有值得借鑒者亦可加以參學，以發揮去劣揚善之效。為提升大學校長、教師及相關行政人員之國際視野，未來對於國立大學出國案件之審核，應儘可能優先支持與鼓勵；各校也應訂定相關措施，鼓勵人員出國交流。

② 放寬出國經費之編列運用

私立大學之出國由各校自主，國立大學則在經費編列受限制。近年來大學自籌校務基金之比例逐年提高，各校為提升國際學術交流與合作之成效，應設法編列經費用以補助師生出國，藉此拓展國際能見度與學術之品質。配合校務基金條例之修正，可放寬大學以自籌經費或建教合作、推廣教育、場地收入及利息等收入之結餘，列為出國經費來源，使各校得有自主建立出國審核之機制，以加速大學國際交流之推動。

③ 鼓勵設置國際學術交流單位

我國大學法對於各校是否設立國際學術交流單位或人員並未明定，因此許多學校均受不重視此單位或人員之設立。相較於歐美及鄰近的日本、韓國、新加坡、香港等，我國的高等學府似乎欠缺此種必須設法建置之國際學術行政單位。少部分已設立國際學術交流單位者，也因實際人員編制不足、學費待加強，而無法發揮良好運作成效。欲鼓勵各大學走向國際，基本的承辦單位及具國際宏觀的主事人員，殊有必要。

④ 招收國際學生之必要牲

澳洲及歐美各國之大學均相當重視國際學生之招募，對於國際學生之教學、輔導也都訂有相關規範，因此國際學生之規模相當可觀，而且來自世界各國，對於國際化的建立已經奠定良好基礎。近幾年我國留澳學生已增加到六十多人；雖然如此，澳洲政府及各大學仍積極希望爭取更多我國學生赴澳留學。反觀國內大學，不但國際學生人數欠缺，外籍生所代表的國家數也直線增加。除駐外人員可多加協助聯繫外，各大學應主動提升學術品質與國際學術地位。事實上，我們列為優先爭取的東南亞各國，其赴澳洲留學之比例提高，如何提高誘

23

利，大學自主機制不足，難以建立發展優勢，大學評鑑制度又尚在起步等缺失。為改善上述缺失，各大學應儘量提供教職員出國交流機會、放寬大學出國經費之編列或運用、鼓勵各校設立國際學術交流單位或人員、招收國際學生之必要性、建立良好的英語學習環境、授權大學自主權責、建立大學評鑑機構之必要性等七項建議，

附錄三：新聞報導彙編

台澳高等教育會議 順利登場

避開中國干擾

台澳斷交30年首次最高層級大規模學術交流活動 探討卓越及品質保證議題

【華澳時報記者陳平之／八日阿得雷德報導】第一屆由台灣與澳洲官方支持的台澳高等教育會議順利避開中國干擾，八日起連續兩天在澳洲阿得雷德市舉行；我駐澳代表處表示，這是澳洲與我國交訂三十年來首次最高層級的大規模學術交流活動，可謂意義重大。

我方與會人員計有中研院院長李遠哲、教育部次長呂木琳及教育部多位官員、六大學校長陳維昭等在內十六所公私立大學校長團及教授代表近四十人；澳洲聯邦政府教育部次長希格亦率官員及十六所公立大學校長、副校長及教授團五十餘人與會；希格並讚揚澳洲近年來高等教育改革及現況發表專題演講。

中研院院長李遠哲昨上午此行除發表專題演講外，同時應澳洲政府之邀，至聯邦政府所在地坎培拉及第一大城雪梨進行參訪及會晤重要科技及教育界人士；並將於十二日接受新南威爾斯大學頒授之榮譽科學博士學位，並與該校董事會主席奈森美醫師、Cos Zilis校長及其他高級主管餐敘及座談。

此次會議主題為「追求卓越及品質保證」，行政院國科會亦派國際合作處楊啓航處長兼程來澳，與澳洲科技主管及重要學者會晤，共商具體可行之科學研究合作方案。

輔仁大學校長李寧遠表示，會後雙方代表將舉行工作小組會議，討論如何具體落實此次會議所得之結論，並排定下一屆中澳高教會議兩年後在台灣召開。

李寧遠強調，讓這樣的國際交流不受政治干擾，持續進行，對加入世界貿易組織後的台灣國際化極具正面意義。

此次會議受到阿得雷德市華裔市長黃國鏡的大力支持，市長於七日傍晚在市政大廳安排歡迎酒會，招待所有出席會議之中澳代表。

我駐澳代表處文化組長陳東榮表示，此次會議籌備時間長達兩年，由於具有官方色彩，因此雙方一直低調進行，以避免中共的打壓。

我駐澳代表處代表楊進添非常重視此次會議，特別指派文化組全組參與會議之籌備工作。

僑界人士咸認這項被定名為澳洲與台灣的雙邊高等教育會議(The First Australia Taiwan Conference on Higher Education)模式，有助於台灣加速走入國際社會。

自由時報
九十一年四月十日第六頁

高教會議 官方色彩濃厚

打破無邦交緊箍咒 澳洲教育官員屢屢表態支持 促成交流關鍵

駐澳洲特派記者陳平之／特稿

八日起在澳洲舉行為期兩天的台澳高等教育會議，名義上雖屬學界推動的大學校長會議，實則受到雙方中央級政府大力支持、官方色彩濃厚的一次正式雙邊高教會議。

這也是自一九七二年我國在澳洲首都坎培拉設立代表處來，首次在澳洲舉辦之此類性質會議，對我國加入WTO後以台灣名義大步邁向國際社會的前景，極具務實之指標意義。

今年適逢澳洲與中共建交三十週年，澳洲總理計劃年底訪問中國之際，因此台灣與澳洲這項突破性的會議也被刻意低調進行，以避中共耳目。

回溯這次我國與澳洲突破性的高教會議緣起，與一九九九年九月十七日澳洲前總理基廷應邀來台訪問有關，基廷針對台灣推動的實質外交與國際文教交流的關聯性，以及台灣在邁向二十一世紀時所應考慮的多元國際因應策略的談話中，他特別提出建言，強調台灣應

重視國際交流、進而凸顯特色才能獲取認同，這無疑是國際友邦對台灣推動務實外交的認同及背書。

澳洲前總理基廷的該次談話在次日的台北時報上有翔實的報導，並引起台灣學界共鳴，這樣的激勵加上我方駐澳人員的努力運作，第一屆台澳高等教育會議的構想終於獲得澳洲大學校長委員會(AVCC)及澳洲聯邦政府教育部的支持，該部並允諾撥補助經費；澳洲大學校長委員會係由澳洲

各大學實際負責校務的校長組成，擔任大學與政府間界面組織，地位崇高並具有左右澳洲聯邦政府高教政策之影響力。

二〇〇〇年雪梨奧運期間，澳洲前教育部長曾志朗會晤時，也明確表示澳洲政府將全力支持此一會議。

二〇〇一年三月負責籌辦的南澳大學(University of South Australia)校長戴維以AVCC代表身分來台拜會我教育部。是年七月下旬，教育部政務次長范巽綠應澳洲聯邦政府教育部友善邀請往訪，與澳洲教育部政務次長沙吉維克會商時，再度為二〇〇二年的台澳高等教育會議背書，也為台灣邁向國際社會的道路開拓出更寬廣的空間。

澳臺教育菁英文教交流會假南澳舉行 首屆高教會議四月八、九兩日在阿得雷德市集會

【本報訊】由中澳兩地教育界人士共同主辦的「澳臺教育菁英文教交流會」將於四月八、九兩日在阿得雷德市舉行。屆時來自澳洲、台灣、香港、新加坡、馬來西亞、中國大陸、美國、加拿大、英國、法國、德國、日本、韓國、印度、泰國、菲律賓、印尼、馬來西亞、新加坡、香港、台灣等地的教育界人士將齊聚一堂，共商教育發展大计。

本屆高教會議由澳洲教育界人士發起，旨在促進澳臺兩地教育界的交流與合作。會議將由澳洲教育界人士主持，並邀請來自台灣、香港、新加坡等地的教育界人士擔任嘉賓。會議將討論教育發展、師資培訓、學術交流等議題。

此外，高教會還將舉辦多項活動，包括研討會、座談會、展覽等。這些活動將為教育界人士提供一個交流與學習的平台。高教會還將出版《高教會會刊》，為教育界人士提供最新的資訊與動態。

「2002年台灣當代工藝展」在坎京舉行 顯示當代台灣藝術家獨特風格

【本報訊】由坎京藝術學院主辦的「2002年台灣當代工藝展」將於四月八、九兩日在坎京舉行。屆時將展出來自台灣各地的當代工藝作品，展現台灣藝術家的獨特風格與創意。

此次展覽由坎京藝術學院主辦，旨在向國際展示台灣當代工藝的發展現狀。展覽將展出多種類型的工藝作品，包括陶瓷、玻璃、金屬、木器、竹器、皮革、纖維、編織、漆器等。這些作品展現了台灣藝術家對傳統工藝的創新與發展。

此外，展覽還將舉辦多項活動，包括研討會、座談會、展覽等。這些活動將為藝術家提供一個交流與學習的平台。展覽還將出版《2002年台灣當代工藝展作品集》，為藝術家提供展示作品的平台。

在坎京藝術學院主辦的「2002年台灣當代工藝展」中，藝術家們展示了豐富多樣的創作。這些作品不僅展現了台灣工藝的精湛技藝，更體現了藝術家們對傳統工藝的創新與發展。展覽吸引了眾多觀眾前來參觀，展現了台灣當代工藝的獨特魅力。

此外，展覽還將舉辦多項活動，包括研討會、座談會、展覽等。這些活動將為藝術家提供一個交流與學習的平台。展覽還將出版《2002年台灣當代工藝展作品集》，為藝術家提供展示作品的平台。

此次展覽由坎京藝術學院主辦，旨在向國際展示台灣當代工藝的發展現狀。展覽將展出多種類型的工藝作品，包括陶瓷、玻璃、金屬、木器、竹器、皮革、纖維、編織、漆器等。這些作品展現了台灣藝術家對傳統工藝的創新與發展。

此外，展覽還將舉辦多項活動，包括研討會、座談會、展覽等。這些活動將為藝術家提供一個交流與學習的平台。展覽還將出版《2002年台灣當代工藝展作品集》，為藝術家提供展示作品的平台。

華人服務社活動安排

華人服務社將於四月八、九兩日在阿得雷德市舉行多項活動。屆時將有來自各地的華人參加，共同慶祝佳節。活動內容豐富多彩，包括聚餐、歌舞表演、遊戲等。歡迎廣大華人踴躍參加。

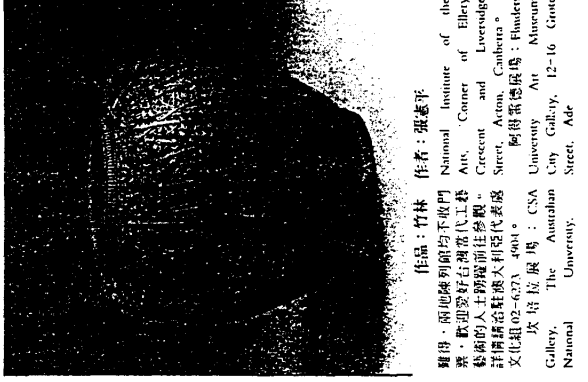
此外，高教會還將出版《高教會會刊》，為教育界人士提供最新的資訊與動態。高教會還將舉辦多項活動，包括研討會、座談會、展覽等。這些活動將為教育界人士提供一個交流與學習的平台。

此外，展覽還將舉辦多項活動，包括研討會、座談會、展覽等。這些活動將為藝術家提供一個交流與學習的平台。展覽還將出版《2002年台灣當代工藝展作品集》，為藝術家提供展示作品的平台。

此外，展覽還將舉辦多項活動，包括研討會、座談會、展覽等。這些活動將為藝術家提供一個交流與學習的平台。展覽還將出版《2002年台灣當代工藝展作品集》，為藝術家提供展示作品的平台。

此外，展覽還將舉辦多項活動，包括研討會、座談會、展覽等。這些活動將為藝術家提供一個交流與學習的平台。展覽還將出版《2002年台灣當代工藝展作品集》，為藝術家提供展示作品的平台。

此外，華人服務社還將舉辦多項活動，包括聚餐、歌舞表演、遊戲等。歡迎廣大華人踴躍參加。



作者：張志平
National Institute of the Arts, Corner of Crescent and Liversidge Street, Acton, Canberra.
作者：竹林
作品：兩地關係的斷裂與重聚，歡迎愛好台灣當代工藝藝術的人士踴躍前往參觀。詳情請洽駐澳大加亞代表處。文化組02-6273-4904。
坎培拉展覽場：CNSA University Art Museum National Gallery, The Australian City Gallery, 12-16 Civic Street, Acton, Canberra.

此外，高教會還將出版《高教會會刊》，為教育界人士提供最新的資訊與動態。高教會還將舉辦多項活動，包括研討會、座談會、展覽等。這些活動將為教育界人士提供一個交流與學習的平台。

此外，展覽還將舉辦多項活動，包括研討會、座談會、展覽等。這些活動將為藝術家提供一個交流與學習的平台。展覽還將出版《2002年台灣當代工藝展作品集》，為藝術家提供展示作品的平台。

此外，華人服務社還將舉辦多項活動，包括聚餐、歌舞表演、遊戲等。歡迎廣大華人踴躍參加。

此外，華人服務社還將舉辦多項活動，包括聚餐、歌舞表演、遊戲等。歡迎廣大華人踴躍參加。