行政院及所屬各機關出國報告書
（出國類別：其他）

Microsoft 2nd Regional Advisory Council Meeting 出國報告

服務機關：教育部電子計算機中心

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報告日期：94年08月03日

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報告摘要

「Microsoft 2nd Regional Advisory Council Meeting」是微軟亞太區及日本區共同於 94 年 5 月 24 日至 94 年 5 月 27 日在菲律賓 Cebu 舉行，此研討會源於資訊科技帶來了農業與工業革命以來，人類史上最大的躍進，然而，儘管生活型態、商業行為模式與溝通方式全盤改變，全球教育方式卻未跟上這樣的潮流，整個會議的主要概念建立在『一個快速變動的世界』，許許多多的機構或是個人投注了相當多的心血在他們各自的領域上，試圖跳脫出教育或科技的窠臼，去預測世界發展的趨勢，並預做準備，因此，這次會議邀請的對象超過 16 個國家的代表與會，為各國資訊教育的決策者及相關領域專家學者，共同在會議中，提供與其他國家資訊教育決策者互動、經驗分享的平台，微軟總部亦請學者專家簡報一些目前國際上資訊教育的趨勢，而最大的特色是藉此讓亞太地區教育界人士與微軟教育諮詢顧問專家交流，藉著彼此持續瞭解資訊科技融入教學的最新發展狀況，也更清楚勾畫未來學校的型態、功能與藍圖及未來學校需要的教師應該具備何種資訊能力與素養。

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「Microsoft 2nd Regional Advisory Council Meeting」微軟公司邀請亞太地區各國資訊教育的決策者及相關領域專家學者，超過16 個國家的代表與會，期望在會議中，與其他國家的資訊教育決策者互動、交換經驗，並簡報一些國際資訊教育趨勢，讓亞太地區教育界人士與微軟教育諮詢顧問專家彼此持續瞭解資訊科技融入教學的最新發展狀況，也更清楚勾畫未來學校的型態、功能與藍圖為何？未來學校需要的教師應該具備何等能力？整個會議的主要概念建立在『一個快速變動的世界』，許許多多的機構或是個人也投注了相當多的心血在他們各自領域上，試圖跳脫出教育或科技的領域，去預測世界資訊教育發展的趨勢，並預做準備，本著他山之石可以攻錯，藉著此次受邀參與研討會，進一步吸取瞭解各國資訊教育發展之心得經驗，期見賢思齊，見不賢而內自省，作為規劃或改善我國中小學資訊教育之借鏡。

貳、過程

2005/05/24 上午 07:30 抵桃園中正機場,搭乘 09:30 長榮航空 BR271 班機於上午 11：30 至菲律賓馬尼拉，轉 15：00 菲律賓航空 PR849 班機於 16：15 抵達 CEBU MACTAN INTL。

2005/05/25 上午 08：00 Microsoft 2nd Regional Advisory Council Meeting 研討會假菲律賓 CEBU 香格里拉旅館(Shangri-La's Mactan Island Resort, Philippines)會議廳正式開幕，直到下午 6:00pm 才結束本日研討會。本日研討會除由主辦單位邀請的學者專家發表專題演講外，將受邀請的各國資訊教育專家分為四組，輪流從四面不同的面向來探討世界趨勢，僅止於發人引思，談談每個人心中的感受外，並沒有所謂的答案。第一個主題為新力量（New Power)，第二個主題為新時代（New Age)，第三個主題為新世界(New World)，第四個主題為新族群(New Tribe)。

2005/05/26 上午 09：00 繼續第二日研討會，本日議程除將第一天有趣的發現或關鍵因素整理歸納後，再發展到教育的主題上，並進行第二輪的發表與引述。下午 14：00 去拜訪與微軟合作的當地師範學院及當地中學，參觀如何將資訊科技融入教學中。

2005/05/27 當日上午 07：30 從 CEBU MACTAN INTL 機場搭乘菲律賓航空 PR844 班機，於上午 08：40 至菲律賓馬尼拉，轉 12：40 長榮航空 BR272 班機，於 14：45 返回桃園中正機場。

在菲律賓活動行程表如下：

Day One - 25th May 2005 (Wednesday):

Time	Programme	Perspective
9am	Opening and Welcome	Welcome and opening address by Mr. Peter Moore, Regional Managing Director, Asia Pacific Public Sector, Microsoft Address by Chairman, International Advisory Council, Partners in Learning Keynote Address by Secretary of Education, Philippines.
10.15am	Coffee Break	
11am	The Disruptive Conversations	A Panel discussion involving 3 leading industry Asian leaders who will share how their organisations have responded to the recent rapid changes in the global and regional environments. The focus of the conversation will be around understanding, identifying and respnding to "disruptions" that often times appear far removed, but can have massive impact on your industry. This moderated session will allow for 20mins of question and answers from the floor.
12 pm	Lunch	
1.30pm	Theatre of the Future	Council Members will be immersed in 4 different "futures" covering areas such as social, economic, community, etc. These futures will be highly experiential and we ask for the council members to absorb in the different perspectives around how the world could evolve over the next 5-10 years
3.30pm to 5:30pm	Rippling Effects and Disruptive Innovation	After the experience of the "futures", the council members would then work in 4 separate groups. Each group would have a facilitator and the intent is to engage in a conversation around the different futures. We will then dive into the nature of rippling effects and how it may impact education in the future. Initial ideas around how education could look like in 10 years, would start to appear.
7.30 pm	Dinner	

Day Two – 26th May 2005 (Thursday):

Time	Programme	Perspective
9am	Imagineering Work	The 4 separate groups are given time to visualize and work out their imagination of how education could look like in 10 years in terms of key areas such as classroom, teaching & learning, curriculum, etc. The creative side of each council member would be unleashed here. * Resources will be provided for each group to create visual presentations
10.30am	Presenting the Future	The 4 groups then make a compelling presentation to the entire conference. This will involve a variety of options, dependant on the group members.
2pm to 6pm	Visits to schools	Interesting visits to schools in Cebu have been arranged for the council members.
7.30 pm	Dinner	

參、心得

整個 Microsoft 2nd Regional Advisory Council Meeting 會議的主要概念建立在快速變動的世界中，如何從四面不同的面向－新力量、新時代、新世界與新族群（New Power、New Age、New World、New Tribe）來探討世界的趨勢，因在現況有許許多多的機構或是個人投注了相當多的心血在他們各自領域上，試圖去預測世界發展的趨勢並預做準備，跳脫出教育或科技的領域，第一天僅從四面不同的面向來探討世界趨勢，只是發想，並沒有所謂的答案；第二天再將第一天有趣的發現或關鍵因素整理歸納後，再發展到教育的主題上，畢竟以更宏觀的角度來思考教育，或許可以清楚的掌握發展的趨勢，並進行教育在資訊科技的協助下，如何建構未來學校。

此四個面向（Facts of the Future）的第一個主題為新力量（New Power）：這個主題探討的是能源問題。

> 原油價格從十年前的每桶 20 美元左右，到現在 2005 年，每桶 60 美元，可以預見到 2015 年，有可能每桶原油將超過 150 美元一桶。現實狀況是：我們依賴原油的程度太深，食、衣、住、行樣樣脫離不了原油。雖然目前尚無確切的數據可以預測世界上的原油還有多少的存量，但原油存量會逐年越來越少，而且可以預見的事實是原油價格會一路攀升。
>
> 原油供給量的減少，我們是不是需要找尋第二種或更多的替代能源？因為能源供給種類或樣式的不同，我們的生活模式是不是也要跟著改變？旅行是否會減少？出國留學是否變得更加困難？去學校上課的次數是否會減少？所有電器及科技設備的使用率是否會跟著減少？會不會又重回五十年前的生活模式？

第二個主題為新時代（New Age）：這個主題是以專訪的方式採訪三個年齡層代表，探討的是年齡族群的優勢與劣勢。

三個年齡族群分別為 25 歲、45 歲及 65 歲。

65 歲的代表表達出對時代變遷的憂心與無力感;這位代表 Tom 因為早年習慣父權的威嚴，一向茶來伸手飯來張口，不需要去學習任何技能，而且與家人相處一直很不融洽，幾年前與妻子離婚後，一個人生活，與年輕一代的子女無法溝通，子女也不願意奉養他，現在如何在新的世界再賺錢度日，存錢養老已變成他的最重要課題。

45 歲的年齡層代表 John，John 表達的是對未來的不確定感；John 有某些程度的參與世界趨勢的發展，利用工作之多的時間，自我充實，努力學習一個新時代該具備的技能，John 認為現在如果沒有手機，不知要如何過日子，但 John 的困擾是：他剛失業，因為他的認真不懈，在公司裏位居要位，突然有一天，他的老板告訴他，因為他太貴了，公司負擔不起，所以只好請他走路，John 知道再也找不到一樣的工作，但是他還有老婆及小孩要養，對於未來，他充滿徬徨。

25 歲的 Allen，對世界有無限的憧憬與夢想，想要環遊世界、想到不同的國家去工作與生活；Allen 想當一名演員，可是他還是擔心他的父母不能接受他的夢想，不願意聽從父母而原諒他。

第三個主題為新世界（New World）：這個主題探討的是年輕人在網路世界中，使用自己的方式處理問題，不再做深層的思考。

主角是一位名叫 Amy 的 18 歲女生。 Amy 有百分之六十的時間都花在電腦上，她認為最重要的事情是：從網路上下載（download）音樂、電影、…，從網路上訂演唱會門票，從網路上搜尋各種訊息，與朋友在網路上聊天，…；但是， Amy 的媽媽認為 Amy 從來不做正事，沈迷或沈癮於網路世界中，兩代對電腦與網路的使用與認知有很大的落差。

隨著資訊科技發展，與網際網路應用，各行各業透過網際網

路建構新的溝通模式與交易方法，建構一個新的資訊世界。從 Amy 的行為可以發現，現在的年輕人，有自己的語言，他們用極簡化的文字或圖示來表達，有他們自己的處理事情的模式，他們能同時間開十幾個視窗，同一時間處理不同的事物，雖然他們依賴電腦與網路甚深，他們還是希望能跟網友見見面，做實體的接觸。但對於事情的重要性與急迫性卻是父母所無法理解的，我們亦無法明白他們的優先順序，而且對於事情的理解與判斷幾乎都在幾秒之間，不再做深層的思考與判斷。

第四個主題為新族群（New Tribe）：這個主題探討的是因全球化，人們的求學與遷移愈來愈大而且愈頻繁產生新族群，對未來生活產生變化與影響的問題。

主角是一位生長於泰國鄉村的大家庭，家中有十四位兄弟姊妹，而他排行老么，所有的哥哥姊姊們在小學畢業後，即綴學工作幫忙家計，因為主角是最小的兒子，在哥哥姊姊們幫忙家計後，使得家庭有能力協助他繼續升學，父母也將心力與希望放在主角身上，鼓勵他一路升學至大學畢業後，亦幫忙他到英國深造，以獲取碩士、博士的學位，只因為離家鄉太遠及旅費太高，父母只能從照片上看到主角的畢業典禮。主角畢業後想回家鄉，但父母卻鼓勵主角留在英國就業，主角在就業期間認識一位英國女子，進而戀愛結婚，同樣地也因為離家鄉太遠及旅費太高，父母無法至英國為兒子證婚，只能看著兒子的結婚相片來分享么兒的婚禮，接著又因主角的孩子出生，想讓父母來英國沾沾抱孫的喜悅，卻因為父親的大哥過世，而無法團聚，這讓主角突然體會到父母也已經老了，後來因為全球化的趨勢，主角不得不被調到法國去工作。終於有一天，主角的母親打電話告訴他，父親已經病危

送入醫院，從主角大學畢業之後有三十多年沒有再見到自己父母及兄弟姊妹，直到父親臨終前，希望能見到父親最後一面。

世界全球化後，人們因工作而遷移的距離愈來愈遠而且愈來愈頻繁，而且這也是必然的趨勢，產生一個新的族群，這新族群為因應這樣的趨勢，使很多人很難找出時間再與自己家人好好的相聚在一起，這對未來的生活產生什麼樣的影響?

從以上四個面向的主題，產生了許許多多的想法，導引講師試著讓每一組每一位學員從其中找出三項最引起自己的興趣的想法，然後套用到教育領域，看看有什麼發現？我們這一組歸納出三項關於未來教育的想法，一是虛擬教室的應用，二是終身學習的重要（效率學習及學習符合實際需求），三是全球化的趨勢，更寬廣的學習領域及學習方式。

微軟（Microsoft）藉著透過對全球經濟與未來趨勢的觀察，藉著邀請各國資訊教育的決策者及相關領域的專家學者，藉由提供教育界所需的資訊工具和教育訓練等幫助，累積了大量的 Know How，藉著嘗試了解不同國家和不同文化在發展 ICT 教育方案時所面臨的困難和挑戰，並對教育界長期和具體的承諾，提供創新的工具方案和實際運用，以幫助學生和老師們發展他們的無限潛能，於 2003 年 5 月推出一個全球性的新方案－全球夥伴學習計畫「Partners in Learning (PiL)」。這是長達五年（2003 Sep.~ 2008 Jun.）的計畫，主要目標在於授權教師和學生透過更多的管道取得最新的電腦技術和使用上的訓練讓他們的潛力完全發揮，預計在五年內投資二億伍仟萬美金在全世界推動資訊教育改進計畫來達成縮減城鄉數位落差及提昇資訊素養之目的，奠基於一個堅定的信念－教育會改善生活、家庭、社會甚至於整個國家。預計參與的國家共計有 70 個，第一波參

與的國家共計有 12 個，分別為印度、巴西、中國、俄羅斯、英國、法國、德國、泰國、台灣、加拿大、維米比亞及日本等國。活動對象為 K12（幼稚園至高中職）之教師及學生。並藉由「Partners in Learning 方案」的推廣，微軟將更專注於全球的資源 — 人、合作夥伴、服務、社會公益和產品以刺激上述的改變。

藉著遵循「幫助學校透過領導老師改善學生學習」的目標，PiL 方案將提供下列相關幫助：

- 學生和老師資訊傳播科技（Information and communication technology , ICT）技能測驗的工具
- 供老師使用的優質課程工具
- 老師的資訊技能訓練和持續教育 / 指導
- 獲得數位內容的管道
- 學生的認證測驗和技術支援
- 成果的測量和研究

亦即藉由和當地社區團體、教育機構和訓練單位的合作，微軟將成立許多 Microsoft IT Academy Centers，由當地的機構提供場地而微軟負責提供日常的管理以及相關的軟體、硬體、訓練和課程。Microsoft IT Academy Centers 將使用「領導老師」的模式，加上校內指導和線上社群的方式來發展教師的培訓和領導計畫、本土化的課程以及 ICT 的評估測驗等，此外方案亦將提供老師和學生的參與獎勵和成功案例的表揚計畫。

全球微軟教育事業部門總經理 David Driftmier 曾說：能夠聽到來自世界各地的學生與老師和我們分享，全球夥伴學習計畫(PiL)對他們所提供的幫助，確實是非常令人滿足的。事實上，微軟觀察到世界各國政府的領導者都在急切地尋找能夠提高全民資訊科技能力，使他們得以成為受過良好教育且具有競爭力的工作者，並且改善

生活品質的解決方案。儘管，這是一個龐大而複雜的問題，但是，政府官員已經對我們願意協助他們解決這些問題的善意付出表示正面的回應。在我最近與一位墨西哥教師的談話中，我也謙遜地聆聽到她熱情地告訴我，她以及她的學校在 PiL 於拉丁美洲舉辦的教師訓練課程中如何地受益良多。當然，真正的證明不只來自於這些個人的小故事，更包括了整個專案的規模，成千上萬的老師被訓練、許多的課程被傳授以及 PiL 計畫已經在 80 個國家造成了深遠的影響。

台灣微軟邱麗孟總經理亦說：資訊，可以為孩子打開一扇窗；當學校老師將資訊帶進課堂後，我看到我的孩子用不一樣的方法去學習，他不但學會用投影片做簡報，還懂得主動運用多媒體的效果、有獎徵答的互動方式，讓小組的簡報更生動；即使題目是「石油怎麼來的？」、「我們如何做環保？」這樣的題目，在資訊科技的啟發下，他會和同學一起用網路搜尋資料、用 MSN 溝通想法、交換檔案，看到孩子的學習不再受到教室的限制，充滿了無限的創意！

台灣微軟陳佳惠亦說明：台灣 PiL 專案在 2005 年最重要的幾項工作，除了落實『 Partners in Learning Grants 方案』，藉由紮實的教師訓練讓資訊融入教學的概念深度紮根，積極於全台各地成立 IT Academy Centers 外，也將成立全球第一個實現 School Future 概念的資訊融入教學典範學校，打造完全顛破傳統教育觀念、將資訊融入於教學環境、教學理念，並且徹底實行於整個學校而非個別班級的理想學校，而這個學校選定在台北市立中崙高中。在過去，無論在台灣或全世界的資訊融入教學案例中，大多都以班級或小組的規模推動，至今仍未出現全校參與資訊融入的學校，在這個 School Future 中，所有的教材、課程與校園設計，都從「教師與學生在未來的社會中需要什麼樣的能力」此一基礎開始發展，同時，一份由全球微軟教育事業總部集結眾多專家所設計的 K12 國際教材，台灣也將成為率先獲得本土化版本，並於 2005 年試行的國家之一；在導入過程中，

每位參與的老師都認為這份教材相當具有震撼性，而且，這份教材最大的特色，便是可以訓練學生自己發現問題、整合問題的能力；其執行內容大致分為下列十項：

(1)　國際課程本土化
(2)　本土課程研發資訊
(3)　設置示範教學點，架構先進校園與教室
(4)　資訊教育白皮書
(5)　提供老師使用優質課程工具
(6)　教師資訊技能訓練和持續教育
(7)　協助現有教師社群發展
(8)　教師及學生的認證測驗和技術支援
(9)　成果測量和研究
(10)　資訊教育論壇及研討會

那麼台灣的 PIL 最主要的就是建立老師的資訊信心（Building「Elegant Confidence」 in Teachers)，以期藉此計畫提昇我國中小學教師資訊素養及能力，落實資訊融入學科教學及提昇中小學生資訊能力；並將此結合相關領域的專家學者研擬八個相互連貫的子計畫實現微軟公司在台灣地區所擬定之執行內容。計畫之核心在於建構一個示範教學點(子計畫四)，實現微軟總公司所希望設置示範教學點及架構先進校園與教室之目標，並朝向兩大方向著手:

(1)　營造良好的資訊化教育環境
(2)　培育師生完整的資訊素養

要營造良好的資訊化教育環境有賴於資源、教材、互動等三要素之配合。子計畫五針對資源部份進行整合，提供教師發展活潑多樣的

教材或教學之用，並且建立數位倉儲來達成教師教學資源共享與傳遞的目的。在教材部份，子計畫一及子計畫二利用網路多媒體的特點，設計出多元化、生活化、實用化、趣味化的教材內容，並以生動、活潑的教學方式呈現，分別實現國際課程本土化以及本土課程研發之目標。在互動方面，子計畫六將資訊科技導入家庭聯絡簿系統的設計，藉以提高溝通工具的可親近性（accessibility），以便達到更有效的老師、學生、家長之間的互動目標。在培育師生完整的資訊素養方面，必須著重在教師以及學生資訊能力的培養與訓練。子計畫三及子計畫七針對學生部分，負責調查資訊素養能力，以了解瞭解其在資訊領域認知、技能及態度之落差分佈與成因，並且將規劃線上學習課程，提升資訊知能。在教師部分，子計畫八建置一套資訊能力分析檢測系統，提供中小學教師檢測現況之使用。從檢測結果分析教師資訊素養及資訊作業能力的優劣分布情形，提出數位化之教育訓練課程規劃，以培養教師資訊作業能力。希望這計畫只是一個長期奮鬥的開始—將不斷地繼續在教育和學習方面發展以求精進，最後希望每一位教師和學生都能將他們的潛力完全實現。並簡要說明如下：

總計畫(提昇我國中小學資訊教育素養與環境之研究)：主要任務為負責整體計畫之落實，協調及確認各相關學者之計畫是否符合整體規劃，並負責監督各計畫之執行成效。

子計畫一(英文魔法妙妙屋)：主要是以提昇國中小學生的英文能力為主，應用資訊與語音科技，整合網路人際互動功能，建構一個多人遊戲式學習環境，讓學習者在遊戲與真切的環境中學習。

子計畫二(鄉土語言網路教學)：主要是設計出多元化、生活化、實用化、趣味化的教材內容，並培養學生學習鄉土語言的興趣和基本的鄉土語言之溝通能力，且針對語言教學網站設計一套評鑑的指標，對現有之閩南語教學網站進行評鑑，亦將設計一套網路鄉土語言教學之架構，做出兩個示範教學單元的內容與活動。

子計畫三(社經弱勢學生的資訊素養檢測及能力培訓)：主要是調

查社經弱勢學生之資訊素養能力，以了解其在資訊領域認知、技能及態度之落差分佈與成因，並規劃線上學習課程，發展降低社經弱勢群體學生與一般學生之間數位能力落差的可行策略。

子計畫四(示範教學點電腦網路環境架構之建置)：主要是建置一個可提供有線與無線上網功能之校園電腦網路環境及推展資訊科技融入教學所需之基本環境，在此環境基礎上，了解利用資訊科技融入教學後對提昇國內中小學教育之教學及教學資源的整合之成效。校園電腦網路環境之改善包括：(1)校園內無線上網能力之建置 (2)教室建置有單槍投影設備，可以直接使用電腦設備上課 (3)使現有電視機播放來自影音伺服器之數位輸出訊號 (4)改善現有影音伺服器之性能並增加存放在影音伺服器內之課程資料 (5)增加手提電腦設備及投影設備以利教學。

子計畫五(教師數位資源及數位倉儲建置)：主要是建構個人化數位學習平台與資料管理工具，提供教師發展活潑多樣的教材或教學之用，並且建立數位倉儲來達成教師教學資源共享與傳遞的目的。

子計畫六(3G 無線網路導入家庭聯絡簿之實驗)：主要是導入資訊科技於家庭聯絡簿系統的設計，藉由提高親師溝通工具的可親近性(accessibility)，以便能夠達到更有效的老師、學生、家長之間的互動目標。

子計畫七(資訊教育成果測量與研究)：主要是依「國民教育九年一貫課程」所設計實施小學生資訊科技素養之培訓，進行成果測量與研究，以提出未來發展方向。

子計畫八(教師資訊能力現況調查及能力培養)：主要是調查南部地區五縣市（高雄市、高雄縣、台南市、台南縣、屏東縣等）教師資訊能力現況，並提出數位化之教育訓練課程規劃，建置教師線上學習系統，藉以提供教師線上進修，培養教師資訊應用能力。

子計畫九 (Peer Coaching)：主要是建構更活潑、生動的教學方式，以吸引學生的學習興趣，並探討如何鼓勵與協助教師應用資訊科技於教學。

肆、建議事項

資訊教育乃奠定國家競爭力之基礎，為落實資訊教育向下扎根與普及全民資訊素養，教育部於民國 86 年 7 月起積極推動「資訊教育基礎建設計畫」，勾勒出全國各級學校及師生的資訊教育的藍圖，並於 88 年因執行擴大內需方案，提前完成全國各中小學電腦教室及網際網路連線建置作業；又於 90 年 6 月完成「中小學資訊教育總藍圖」的規劃，建立「資訊隨手得，主動學習樂；合作創新意，知識伴終生」的願景；同時為配合國家整體資訊發展策略與終身學習理念，復於 91 年推動「ｅ世代人才培育計畫」，加速進行「建構數位化學習內容」、「縮短中小學城鄉數位落差」、「建立終身學習網站平台」三項主要工作，以塑造整體資訊化社會教育改革環境，期使全民順利適應於資訊化社會之挑戰，迎接教育新世紀的到來。

在資訊化的社會中，培養每個國民具備資訊知識與應用能力，已為各國教育發展的重點，各國紛紛推動相關的資訊教育計畫，以為其國家邁向二十一世紀的發展奠基。資訊教育旨在培養學生資訊擷取、應用與分析能力，更要養成學生創造思考、問題解決、溝通合作，與終身學習的能力，並建議完成下列目標，以為達成發展健全的國民，而成為適任於資訊社會的一份子。

一. 健全資訊教育基礎建設環境，提供全國各級學校網路及資訊教育所需之網路資訊基礎平台(Network Information Infrastructure)。並達到中小學班級教室有網路及電腦，隨時提供教學應用之需要。

二. 培訓教師具備資訊應用素養，強化教師資訊科技融入教學知能，俾能循序漸進而有效的運用教學資源，開啟全新的互動教學模式。

三. 充實整合數位化教材資源，以建立共享與加強網路教學的深度與廣度。

四. 研擬學生資訊素養與資訊能力指標，並教育學生資訊擷取、應用與分析、創造思考、問題解決、溝通合作的能力，以及終身學習的態度。

五. 應用資訊科技強化學習成效以縮短城鄉差距，並加強協助偏遠地區中小學教師運用資訊融入各學習領域教學，使教學模式與都會區同步改善創新，亦藉由網路教學內容充實及共享機制之建立，使城鄉學習機會無落差。

伍、相片集錦


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CABANCALAN NATIONAL HIGH SCHOOL
ANNOUNCES SY 2005-2006
REGULAR SCHOOL ENROLMENT
MAY 16, 2005
REGULAR START OF CLASSES
JUNE 6, 2005
ADMINISTRATION & PTCA OFFICIALS
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in Learning
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NATIONAL HIGH SCHOOL
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Virtual classroom
Global
Systematic Learning
Lifelong Learning


FACETS OF THE FUTURE
TRIBES
NEW AGES
NEW POWER
WHAT DOES THIS ALL MEAN?
FUTURE


Microsoft
2005
2nd Regional Advisory Council Meeting

附件：日本學校的資訊策略（Information Strategies for schools in Japan）

ICT in Education

□Information Strategies for Schools in Japan□

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Member of IT-NAVI Committee in MOE,Japan

Abstract

In Japan, a nation well-known for its high-tech industries such as TOYOTA and SONY, ICT use in education advanced. Every school has been connected to Internet and PCs have been distributed at the ratio of 8.8 students per PC:

Japanese teachers in general, however, are not active in acquiring ICT literacy for the advancement of education, because they think they have no serious problems with their traditional educational method of one-way knowledge transfer. Since top-down approach of educational reform hardly works in this nation, a lot of other efforts have been made to persuade teachers into active ICT use for educational purposes.

MOE Japan has been implementing several effective policies. Teachers' ICT Use for Changing Educational Quality, for example, has been distributed on Internet and some schools are promoting their reforms with international exchange projects with ICT

1 Internet Use in Education in Japan

100 Schools Project (1994□1997)

Internet use in education in Japan started with 100 Schools Project. The project began in 1994 by the Ministries of Education and Economy, Trade and Industry. It was to study educational use of Internet at those schools with servers and Internet costs provided by the government. In this year Netscape appeared and one year later Windows 95 spread all over the world.

New 100 Schools Project (1997□2000)

In 1997 New 100 schools Project was set out, based on the outcomes of 100 Schools Project. This project focused on educational applications of new network and IT technologies as well as educational use of Internet. It promoted studies of wide and constant Internet use at schools to collaborate with local communities and overseas educational institutes, and studies of Internet use applicable to practical school curricula

Local Community Project of Advanced Educational Network Model (1998)

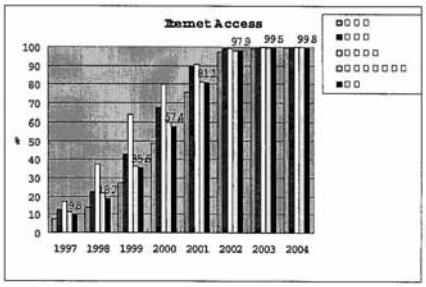
The Ministries of Education and Posts and Telecommunications experimented with the practical use of the high-speed educational network at 1,050 schools in 30 areas. They set up pilot educational local networks with which local educational centers connected their local schools in each area at high-speed.

These three projects have somewhat promoted educational use of Internet, but they have also increased digital divide in Japan, because the educational committee in each prefecture can decide whether or not to use Internet for its schools.

2 IT Basic Law in Japan

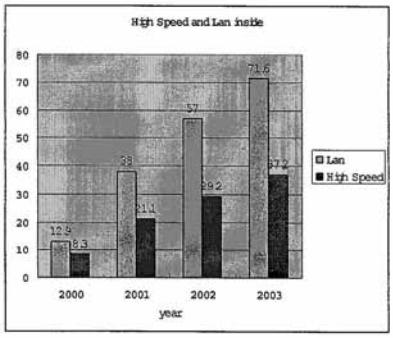
There is the basic law for the IT policy in Japan enforced since January 2001.

It includes all types of measures *to build Japan as one of the most advanced IT nations in the world within five years (by 2005).*



Internet for All Schools

We planned to provide all public elementary and lower/upper secondary schools with the Internet access by FY 2001. Finally nearly 100 percent of those schools had installed the necessary access by the end of March FY 2003. The next task is to set up an environment that enables the use of educational contents of photos and videos and high-speed network (such as ADSL and fiber-optic). This task is to be completed by 2005.



2.2 New Subject "Information"

From 2003 "Information" will be a new required subject in every general course at upper secondary schools. The purpose of this new subject is to help students acquire basic knowledge and skills related to information and understand its meaning and role in

the modern society. It also aims at helping students develop creative abilities and practical attitudes to deal autonomously and rationally with all kinds of issues of the advanced information communication society and to contribute to the development of the society. The subject focuses on the development of the following three abilities.

3 Teacher Training via Internet in Japan

The Ministry of Education, Culture, Sports, Science and Technology has developed a website, "Integrate IT into Your Class", to promote the use of IT in classrooms. The first edition was publicized in May of 2003, and the second edition in May of 2004.

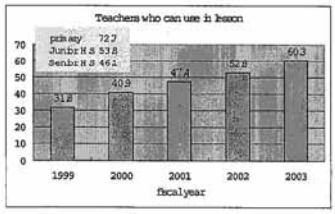
All the classrooms will be equipped with IT facilities by the year 2005. To improve teachers' skills to effectively use computers is a main issue.

The main purpose of this site is to support those teachers who are preparing to make the best of IT facilities in their classes. The contents of the site are composed of teaching plans and useful video material which shows examples of IT use of the basic level.

3.1 Background

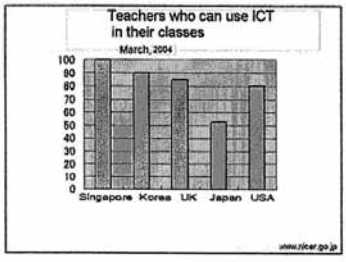
Mentioned before, the year 2005 will be a memorable year in the field of IT use in education. It is written in "IT Basic Law" that Japan will be one of the leading countries in the field of IT technologies by the year 2005. "E-Japan Plans" is renewed every year to reach this goal.

In the field of education, it will be possible to use the Internet in the classrooms of 40,000 primary and lower/upper secondary schools. Teachers are expected to use computers and projectors as means of teaching.



IT NAVI

It is certain that computers and projectors will be equipped in classrooms and the information on the net will be available in classrooms. But it all depends on the efforts of each teacher whether all these technologies will be effectively used. The result of



the survey conducted in 2004 above shows that 87.6% of the teachers of primary and lower/upper secondary

schools say that they can operate computers, however, only 60 % say that they can use computers as their teaching tools. The Goal of the Ministry of Education is that all the teachers should be able to teach their classes using computers. This site will play a role to improve this situation at school.

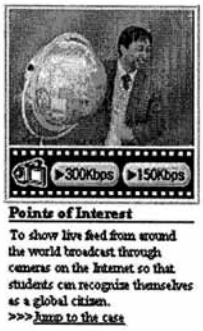
3.3 Contents

Teachers in Japan are always busy instructing club activities, students cleaning the school and so on. This site is designed, as shown below, so that those busy teachers can learn how to use ICT effectively within the minimum length of time.

□1Minute long video clips makes it possible to grasp the whole idea instantly. Video materials shown on the internet turned out to be the most effective and quickest way of conveying ideas.

□Teaching plans are summarized as no more than 1 or 2 pages long document. Teachers grasp a brief idea from the video clips and read the summery of the teaching plans to know the goal of the unit and relevancy to the course of study.

These teaching plans with pictures helped the teachers' understanding effectively.



This site is aimed to give teachers hints in teaching classes and designed so that teachers can collect necessary information through its search engine. All the information can be found as typical examples, or found from classified section according to subjects, levels of schools, and formation of the class.

It started as 40 examples of teaching plans in 2003, and more have been added. Now there are 300 examples, which covers all the subjects and age levels of schools. There will be 400 examples by the year 2005.

Recommended Computer Environment: Windows Internet Explorer 6, Windows Media.

4 ICT Use in School Classrooms

4.1 ICT Use in Schools in the World

ICT has come to stay in schools all over the world. Singapore decides in Master Plan that every school uses ICT in teaching 30% of every subject. Korea sets a goal of 10~30% ICT use by 2005.

4.2 How to Use ICT in Classrooms

While the infrastructure has been built up in schools, the question is how to use ICT in classrooms. We cover the following phases.

Phase 1 Learning How to Use PC and Software

Students learn to use PCs and software such as Word, Excel, presentation software and etc□ They seldom use network or study in collaboration. This phase is introduced at the beginning stage of Information in upper secondary schools and Technology & Home Economics in lower secondary schools. CD software is mainly used.

Phase 2 Network Use

Students use Internet-connected PCs for collecting information, preparing for their presentation and finally give their presentations.

They give their presentations individually or in groups. Teachers also learn to use PCs and provide their teaching materials with presentation software.

Phase 3 Human Network and Collaboration

Students learn in collaboration and find new ideas and opinions from their individually different ones under given topics. The teacher is their coordinator, not the center to give them mere knowledge. Thus students literally learn the way that two heads are better than one.

They learn both leadership and follower-ship.

Sometimes they collaborate beyond their classrooms, that is, with students in schools in other areas. In this was, they advance to study or research with students in other countries in international exchange projects.

4.3 How to Use Network

Internet use in education is seen all over the world. So we can change the quality of education by active use of network. Bellow is described some of the ways to use network for educational purposes.

Example of Phase1 Lower Secondary School Social Studies

Our Life in Global Society

International Issues and Global Citizenship

Today's Objectives

Show live feeds from around the world for the students to experience a sense of participation as a "global citizen," a member of the international community.

Lesson Plan

1 The teacher shall show maps and a globe so that the students will take an interest in the world which they are part of.

2 The teacher shall name specific countries to discuss the local time of each area.

3 The teacher shall show live Internet feed from cameras set in places which the students have interest in.

4 The students, while watching the live feed, shall try to present some of the problems faced by those countries or any information they have about those countries.

5 The students / the teacher shall write in the names of the countries and key words from the preceding presentation onto the large world map on the blackboard.

Example of Phase2 Upper Secondary School Information

Teaching Effective Presentations

—Let's Give Presentations in International Exchange Projects—

Objectives

1 Grasping quickly the image of model presentations through the network

2 Acquiring the basic formats through the network

Student Activities

1 Grasping the quick image of good presentations from video presentation examples onthe network

The students can set their presentation goals while watching video presentations of high school and college students on the Web.

2 Downloading the format for their presentations

The students download the format from Web □ bbs, and design their own presentations.

3 Drawing the concept maps of their presentation themes

The students first learn about concept maps, and then draw ones for their own presentation.

4 Presentation of the concept map

Through the one minute presentation of the concept map, the students will examine if they convey their message successfully.

Example of Phase3 Upper Secondary School English

Objectives

1 Participation in international collaborative learning with Internet

2 Giving English presentations with friends of overseas exchange schools

3 Joining in TV conferences and international presentations

4 Uploading the activities onto Web as learning materials of English

Student Activities□Collaborative Presentations between Japanese and Overseas Schools□

1 Getting visual images of the goal by watching the presentations of previous years on Web

2 Deciding the common topic by email　Conducting surveys in each country

3 Collaboration by email to make allotted presentation files on each side and complete the joint presentation

4 Giving the join presentation by TV conference

5 Uploading the presentation onto Web to get evaluations

4.4 Designing the Classroom

Classroom design will depends on the total space and the number of PCs in the room. Look at the two types shown below. The first type weighs the function of one person to one PC, and therefore the individual ability to operate a PC and software. This type was popular before 2000.

The other type is designed to enable students to look at her friends and teacher as well as PCs. This design gives us a view that ICT is a source of new communication values, not just a mere PC and software operation.

Also ICT education should coexist with ICT devices. With good PCs in good digital environments, students come to love themselves as good learners.

5 21st Century : the Era of Knowledge□based Society

In this century network is used more than in any other century. Through Internet international exchange activities will become parts of school events, and language learning and social studies will be carried out with other schools in other nations.

What is expected of teachers

Teachers were expected to have telecommunication skills in 1990 trough 2000, when establishing network was most important. Little software was developed and technology was mainly to display and retrieve information.

But then they have faced a variety of Internet-based software available in good numbers. They have used them for their teaching materials in their classes. Now finally they need to share their materials with those of other teachers so that they can

create better ones. This process is easy through network.

In their new roles teachers ask themselves for three C's. Communication, Collaboration, Challenge are for it.

New Teaching Style

Network use changes teaching styles. In the past teaching styles in Japan good teaching meant the only sound of chalks in quiet classrooms. The teacher only explained about what was written in the textbook while the students just transcribed what was written on the blackboard.

This is our traditional way of teaching, merely transferring knowledge to students.

PC and Multimedia Change the Teaching Style

In 2000 PCs began to be installed in Japanese schools and now multimedia is used for the improvement of teaching. The teaching style has become student-centered. The picture below shows a class about eyes function of identifying colors. The teacher uses a tablet PC to stand by his students, operates the projector at his hand, writes in the PC and explains about the three color principles while walking among the students.

New Learning Style

In the new learning style the students decide upon their topics, collect necessary information, find new values in collaboration with fellow students, give presentations on the topics, and get evaluations from inside and outside their classrooms.

In this style the students will acquire an attitude of autonomous learning and thinking, and express their opinions in public with confidence. This attitude will finally bring them the ability of audience-conscious data organization and an audience-friendly way of speaking.

□ **Word Youth Meeting**

World Youth Meeting (WYM) is an international event hosted by Japanese Ministry of Education started in 1999 and now going on. It is a typical international exchange project via the Internet, multimedia and English for H.S and University students.

AIMS of WYM

□ To help the students learn the Internet skills needed in the coming age of information technology.

□ The students understand that they need to establish their identity in this global society as well as a well-balanced world view.

The students enhance their abilities to learn from other people, cultures and societies.

References: http://www.japannet.gr.jp/w2004/

BIG RESULTS

participating students inside and outside Japan can review their presentation files

and script files via the Internet on WYM Web. These files will be very effective English learning resources especially for young people in Asian countries.

I've heard some teachers are now using the files in their English communication courses even in universities.

6.1 Consequent Reforms in Participating Schools

Participating schools develop new curricula related to WYM.

WYM as a School Event

In Japanese schools an activity will be financially and actively supported if it is incorporated into school events. WYM has now become a school event for some participating schools.

Curriculum Reform in Some Subjects

WYM is a good opportunity to enrich the contents of some subjects. In English more emphasis is put on communication and Oral Communication can include English presentation and essay writing on themes like Talk about Myself, Talk about My School, Talk about My Country, and etc. In Information Technology students learn from weekly reports 'Multimedia Communication' made for WYM. In subjects of social studies they study intensively about those countries participating in WYM.

This is observed also in the participant Taiwanese school. The high school hosts Asian Exchange Program (ASEP) and holds a welcome party and English presentation contest for some 40 friends from overseas. It regards ASEP as its annual school event. They budget for the event, relate it to their subject teaching and advertise it to the local community. With this event they have raised their school status in the area and drastically improved their educational quality.

6.2 Learning Community

Thus the schools participating in international exchange events are changing. The English presentations the students gave at the events are uploaded on the Web. This highly motivates students to participate in the events. Also the presentations on the Web are used as very effective teaching/learning materials of English, because they are available in videos, English sound, presentation files, scripts and etc.

In short the products of collaborative events turn out to help to improve contents of subject matters at schools. This shows that we live in the age of Internet.

6.3 For School Reform

Schools have many roles to play ever day. Usually most of the roles are played very well, but sometimes some of them are played insufficiently.

We need to improve it. For the improvement teachers from different nations should collaborate, and we can work together by participating in international events mentioned above.

- The members join the international events by Internet.
- They share teaching/learning materials in their specialties.
- They exchange each other their materials and their opinions on them constantly by Internet.
- They also exchange how to use and study the materials.
- They exchange their research results.
- They regularly make research proposals to raise fund or get monetary support.

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