2019教學創新
示範學校國際研討會
創建新世代的高教深耕教與學

指導單位：教育部
主辦單位：雲林科技大學教學卓越中心
<table>
<thead>
<tr>
<th>時間</th>
<th>內容</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00-9:30</td>
<td>報到 Registration (國際會議廳 1 樓)</td>
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<td>9:30-10:30</td>
<td>講者: 柯文慶 教授/大葉大學&lt;br&gt;議題: 教學實踐研究申請實務&lt;br&gt;地點: AC226</td>
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<td>10:30-10:40</td>
<td>休息時間 Tea Break</td>
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<td>10:40-10:50</td>
<td>開幕式 Opening Ceremony （國際會議廳 AC226)</td>
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<td>10:50-12:00</td>
<td>討論者: 施慧玲 教授/國立清華大學&lt;br&gt;議題: 研究參與者招募與同意書撰寫實務&lt;br&gt;地點: AC226</td>
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<td>13:00-13:30</td>
<td>午餐餐會 Lunch Time（國際會議廳 B1)</td>
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<td>13:00-13:30</td>
<td>教師論文發表 Poster Presentation, 茶敘 Coffee Break（國際會議廳 1 樓)</td>
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<td>13:30-14:10</td>
<td>講者: 李傳房 教授&lt;br&gt;議題: 数位課程錄製&lt;br&gt;地點: AC226</td>
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<td>14:10-14:20</td>
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<td>講者: 胡詠翔 教授&lt;br&gt;議題: 背景: 人類研究倫理&lt;br&gt;地點: AC226</td>
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</tr>
</tbody>
</table>
目錄

講者介紹.................................................................................................................................1
大專院校課程推薦系統與學系學用合一之探究.................................................................17
A Study on the Course Recommendation System and Knowledge-Action Integration in Universities .................................................................................................................................18
「喪禮文化及其就業市場」課程 應用教學 123 模式成效之探討：以某科技大學為例..........................................................................................................................19
The Effectiveness of Applying “123 teaching model” to the Course of “Funeral Culture and Its Job Market”- Took A University of Science and Technology as Example .................................................................20
透過共創工作坊進行社區活化 -以彰化縣南郭郡守官舍群共創活動為例....22
By co-creation workshop to conduct community activation ..................................................23
- take the co-creation activity at the official residence of Nanguo magistrate in Changhua county as an example.........................................................................................................................23
Key words: experiential learning, official residence of Nanguo magistrate, community activation, co-creation workshop ..........................................................23
探討自主學習的魅力因子－以高中職及大學生為例 .....................................................24
Exploring Attractive Factors for Self-motivation Learning: two cases studies for high school and university students.................................................................25
以差異化教學實施國小混齡數學補救教學之行動研究 ....................................................26
Action Research of Mathematics Remedial Instruction by Differentiated Instruction Strategy on a mixed-age class .................................................................27
問題式教學增進科技大學工程學院學生之主動獨立學習力 .........................................28
Based Instruction Enhances the Self-directed Learning of the Student of the College of Engineering of the University of Technology.............................................29
程式設計課程導入合作學習分組策略之研究 .....................................................................30
A Study on the Introduction of Collaborative Learning Grouping Strategy into Programming Course .........................................................................................................................31
商管教育之藝企合作教學實踐研究 .....................................................................................32
Teaching Practice Research on Arts & Business Cooperation in Business Education .................................................................33
MＯＯC學習風格研究-經濟學課程為例 ........................................................................34
The Learning Styles within MOOC: A Case Study of Economics Course……36
法學教育的案例式教學法之問題與實踐 —以「生命倫理與法律專題」課程為例－ .................................................................................................................................37
The Problems and Practices of the Case-based Teaching Method in Legal Education - To Take the Course of "Bioethics and Law Topics" As an Example - 38
托育服務創業案例教學研究 .............................................................................................39
The Case Method of Instruction for Child Care Services Entrepreneurship ..........40
問題導向學習在商管學院企業資源規劃課程教學的應用研究 ..................41
Application of Problem-Based Learning in the Teaching of Enterprise Resources Planning Courses in Business Administration ..............................................42
創業學習模式對創新思維的影響之研究 ............................................43
Research on the influence of entrepreneurial learning mode on creative thinking ....44
食在有安全課程學習成效分析 ..................................................45
Analysis on the learning effect on Food and Safety ................................ 47
民間糕餅模雕刻藝術與傳統節慶之研究 - 以傳統糕餅美食為例 .............49
Research on folk cake mold carving art and traditional festivals - Take traditional pastry cuisine as an example ..................................................50
探討實體與虛擬媒介對設計團隊合作之影響—以使用者旅程圖為例 ........51
Impact of Physical and Virtual Mediums on Design Teamwork - User Journey Map .................................................................52
海報論文摘要 ............................................................................1
建築文化資產的實務性自我學習 .................................................4
Practical Self-study on Built Heritage ..............................................5
以敘事力評量情意教育的工程倫理課程行動研究 ................................6
Action Research on Engineering Ethics Courses to Evaluate Affective
Emotional Education by Narrative Training ........................................8
應用道德實踐的「工程倫理與社會」課程行動研究 .............................10
Applying Action Research to Develop Curriculum for Engineering Ethics Based on Moral Practice ..........................................................11
幼兒運算思維教學之行動研究-以圖控機器人為例 ............................12
An Action Research on Teaching Kids Computational Thinking - Taking
Graphic Controlled Robots as an Example ........................................13
學習價值模型與應用 ..................................................................14
Learning Value Model ....................................................................15
設計課程跨領域之創新教學 .....................................................16
Innovative teaching of cross-disciplinary design courses .........................17
是諮商?還是去諮商?:就業諮商與輔導課程之定位探索 ...................18
Counseling or De-Counseling? The Re-orientation of the Employment Counseling and Guidance Curriculum ................................................19
打造時光機的鑰匙——「歷史與文化」課程的精進與活化 ...................20
Creating the Keys of Time Machine: Enriched and Activation Curriculum of “History and Culture” ......................................................21
以設計表現技法課程探討自主性學習成效 .......................................22
A Study on Effectiveness of Independent Learning by Design Rendering Techniques Course ..........................................................23
作品集設計課程規劃對學生自主性表現之研究 ..................................24
Study on the Performance of Students' Autonomy from the Course Planning of Portfolio Design ..........................................................25
<table>
<thead>
<tr>
<th>页码</th>
<th>标题</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>探討應用翻轉教學 SPOCs 的模式與合作學習策略於統計學之 學習成效</td>
</tr>
<tr>
<td>27</td>
<td>An Action Research on MOOC Blended Learning and Self-Regulated Learning</td>
</tr>
<tr>
<td>28</td>
<td>Action research on the exploratory courses of Thao’s ethnobotany with</td>
</tr>
<tr>
<td>29</td>
<td>Integration of Scaffolding Theory and Flipped Teaching Approaches into a Team-based Project</td>
</tr>
<tr>
<td>30</td>
<td>The Study of The Activation of Vacant Space and Field in Campus - Take a Remote Elementary School for Example</td>
</tr>
<tr>
<td>31</td>
<td>The Influence of Integrating Aesthetic Education on Campus Architecture Aesthetics - An Example of Technical High School Programme</td>
</tr>
<tr>
<td>32</td>
<td>Applying Case-Teaching to Explore and Reflect the Meaning of Gender Education</td>
</tr>
<tr>
<td>33</td>
<td>Using an Automated Writing Evaluation System in the College English Composition Classroom</td>
</tr>
<tr>
<td>34</td>
<td>The Design and Implementation of a Recreational- Therapy Course with the Spirits of Art and Social Care</td>
</tr>
<tr>
<td>35</td>
<td>A Theory-Driven Approach to Teaching English Oral Presentation in a Technology-Enhanced Environment and Its Effectiveness</td>
</tr>
<tr>
<td>36</td>
<td>The Design and Implementation of a Recreational- Therapy Course with the Spirits of Art and Social Care</td>
</tr>
<tr>
<td>37</td>
<td>Compare digital distance course teaching with traditional classroom teaching– A case study of a digital course in “Literature and Life”</td>
</tr>
<tr>
<td>38</td>
<td>STEM 融入大學統計教學的學習成效探討</td>
</tr>
<tr>
<td>39</td>
<td>Integration of STEM and University Statistics Education with Investigation on Its Effects</td>
</tr>
<tr>
<td>40</td>
<td>Integrate design thinking and information system (IS) developmentin practical IS project course: A case experience</td>
</tr>
<tr>
<td>41</td>
<td>A Study on College Students’ Self-regulated Learning Motivation and Learning Effectiveness through Self-developed English Vocabulary App</td>
</tr>
<tr>
<td>42</td>
<td>青出於藍—染織繡工藝人才培育教學策略探討</td>
</tr>
</tbody>
</table>
A Study on the Teaching Strategies of Traditional Fiber Crafts Cultivation 66
運用問題導向學習於行銷專業課程之研究 ................................. 68
A Research on Problem-Based Learning in the Marketing Course .......... 69
國際生分享會 ........................................................................ 70
Culture shock and cross cultural adaptability: Learning experience of International
students in Taiwan. A case study of National Yunlin University of Science and
Technology (YunTech) .................................................................. 71
My experience doing a master’s degree in Taiwan ............................. 72
A Study on the cultural adjustment of Indonesian International students in Taiwan
....................................................................................................... 73
2019 教學創新示範學校國際研討會組織 .................................. 74
備 .................................................................................................. 75
講者介紹
 Kenn Ross

講者簡歷:
羅凱先生為 Fortune 30 和在清潔能源、科技、諮詢業的中型跨國公司的行政要員。羅凱先生是米德爾伯里學院 (Middlebury College)的文學士與哈佛商學院 (Harvard Business School)的工商管理碩士

Kenn Ross 是 Minerva 的亞洲區總裁。他來自美國，在亞洲生活了 20 多年，以其對高等教育議題、教育創新和中美跨境教育的知識而聞名。除了 Minerva 之外，Mr. Ross 還是國際學術軟技能促進基金會(IFPASS)的創始人。該基金會是一家美國非營利組織，在中國提供非認知技能和體驗式教育。他經常在 TEDx 等全球教育活動中發表演講，也經常在中國的電視台擔任來賓，討論中國和國際教育相關議題。
Borderless Learning and Big Data

Galit Shmueli

講者簡歷：
國立清華大學服務科學研究所的以色利裔-美國籍特聘教授，同時也是清大服務創新與分析研究中心的主任。
她擁有以色列理工學院的統計學博士學位。

Shmueli 博士教授有關資料探勘、預測分析、互動式視覺化、統計學和其他商業分析相關之課程，並在美國、印度和台灣屢獲教學獎項。她的研究著重在統計和資料探勘方法，以及兩者在信息系統和醫療保健上的應用。她擁有多本著作，其中包含暢銷教科書 Data Mining for Business Analytics。
酒類工業為食品製造業的一環，市場規模約 800 億元，佔相當重要地位。本計畫自編教材，學理講授與實作並重，培養製酒專業人才。課程總論介紹釀酒基礎生化學原理，使學生知所以然；各論則介紹各種酒類釀造技術及品鑑要領，使學生熟練並能學以致用。依上課時間彈性安排米酒、葡萄酒、白蘭地、威士忌、桂花酒、梅酒、啤酒、高粱酒等實作項目，修課學生共同參與並記錄，課後則分組負責發酵、蒸餾等製程管理以及標籤設計直至成品完成。授課期間適時安排酒廠或酒莊參訪，藉由業師講解與實地觀察印證課中所學。教學成果評估除基本的期中、期末測驗外，舉辦成果發表會，全校師生均可自由參加。發表會中各組學生依所負責品項製作海報，提供酒品與調製飲品供與會師生品嘗，並邀請業師及校內食品科技相關教師依：(1)學習歷程報告；(2)海報內容與製作；(3)展示酒品解說；(4)創意調酒品鑑等四項進行評分。綜合而言，本計畫內容豐富，成果亦稱優異，唯修課學生必須體認並接受過程之辛勞。
研究倫理申請實務
Research Ethics Application Task

王雅玄

講者簡歷:
教授/中正大學
國立中正大學人類研究倫理審查委員會主任委員

本次研究倫理申請實務工作坊，將討論實際申請研究倫理審查的準備資料中可能遇到的問題，分別是研究起點的立場、進入田野的招募方式、工具使用與合理報酬、研究風險。

請聽眾分為四組，每組提出一個可能違反研究倫理的情境:

作坊情境討論一：不良的初衷(立意不良善)
作坊情境討論二：不良的進路(不當招募)
作坊情境討論三：不良的方法
作坊情境討論四：高風險研究

聽眾可以提出自身研究或過去曾遇過的研究倫理情境，討論不良情境可能產生的傷害，從中梳理研究倫理所需考量的議題。
「教學創新」為師提升教學品質及學生學習成效，透過課程設計、教材教法、或引入教具、科技媒體運用等各種方式進行。凡研究涉及以個人或群體為對象，使用介入、互動之方法，或使用可資識別特定當事人之資料，而進行與該個人或群體有關之系統性調查或專業學科之知識性探索活動者，於研究進行前應對於參與者之招募方式及知情同意執行告知同意內容。

知情同意的執行的要點及流程，將於工作坊中一一說明、提出範例說明以及提送研究倫理審查中審查重點的提醒，以利於教學創新技法的研究與研究倫理之間取得平衡雙贏。
學思達教學法於牙醫學之應用
Sharestart Teaching Method and its Applications in Dentistry-

余權航

講者簡歷：
教授/中山醫學大學

課程類型：
學思達教學法為翻轉教學

課程主題：
學思達教學法於牙醫學之應用

「學思達教學法」是由張輝誠老師創立的一種翻轉教學法。其主要精神是要改變填鴨式教育，同時訓練學生自學、思考、表達（學思達）的能力。在實務方面有兩個重點：學思達講義與教師主持課堂的能力。透過教師精心設計的學思達講義讓學生自學；經由學思達式的問題設計，配合分組讓同學思考並討論；在課堂之中讓同學上台回答問題來評估學習成效，並訓練同學表達的能力；最後教師根據學生的回答做出回饋及補充，並加以總結。本次課程為講者分享的心得，提供給各位教育先進參考。
彭良禎

講者簡歷:
數學科教師/師大附中

課程類型:
講述教學法~數養教學與
討論教學法~數學探索與 DIY 實作
啟發教學法~文創設計與立體創客

課程主題:
藝數 Fun 手玩~立體篇(肉粽與鑽石)

彭良禎老師畢業於國立台灣師範大學數學系、數學所畢，專研幾何多面體並指導學生專題研究，且長期致力於數學科普文章撰寫與動手做科普推廣活動，另外常受邀擔任系教學設計與教具教案研發成果的教師研習講座與數理營隊講師。此次教學法創新是利用從平面到立體，經由一系列關於四面體(肉粽)與八面體(鑽石)結構的問題導引，帶領學生跳脫紙筆評量的思維，從觀察、探索到驗證，親手體驗藝數 DIY 的組裝之巧；親眼欣賞生活藝數的設計之美；用心感受藝數成長的學習之樂！(附件：課程學習單)
揭示食品標示的面紗
Unveil the veil of food labeling
Teaching Demonstration Task

魏明敏

講者簡歷：
副教授/雲林科技大學

課程類型：
問題導向式教學法課程主題: 揭開食品標示的面紗

魏明敏副教授於雲科大教授食在有安全、食在有力量等科目，非常專注在食安問題，帶領同學了解目前市面上兜售的食物安全，利用教學創新的方式，指導同學在面對五花八門的食品包裝要注意其食品指標。此活動分組進行，將包裝食品分發給各組，引導組員探索討論包裝食品上的食品標示項目，並將其填寫於學習單上，有了初步概念後，才進行食品標示項目的解說。最後，回顧課程主題內容後，以雙向提問方式進行確認組員了解程度。
自 100 年度開始，亞洲大學執行教育部「全校型閱讀書寫課程精進計畫」以來，
文本雖每年更新，然課程之主要精神以生命教育為本之主要宗旨未曾改變。實行計
畫的目的在於提升學生閱讀與書寫能力，並依生命教育的意涵，規劃上、下學期共
四大主軸八大單元，授課篇章含蓋古典文學及現代文學，融會古今、博雅兼顧。

在課程的設計上，講者依據文本中之古典文學與現代文學，穿越古今時空，思
索古今人共同遭遇的生存困境與生命議題，從理解文字背後「人」的精神情思開始，
回頭觀照自我內心的真實想法、情感，契人生命的本質與生存的目的。

由於本課程為大一基礎語文課，在課程內涵為：以生命教育為主軸，將文字還
原為「人」的生命本質之反映、表現，非外化的表意書寫工具。在討論議題的設計，
逐步引領學生思索自我、生命與生活的意義與辯證各種價值，因此在形式上依循「翻
轉教室」的創新教法，在內涵上深入生命價值的核心，引領學生體會、思考文學的
真實意涵，對「我」、「人」、「生命」的意義。
黃芝勤

講者簡歷：
助理教授/雲林科技大學

課程類型：
123 模式教學法

課程主題：
從獨角戲到團隊演出

簡述 123 模式教學法:
指 1 個主題、2 個活動、3 個應用。每次的教學都只有一個主題，讓學習者容易學習與記憶。帶入 2 個教學活動，如是講述、影片、遊戲、提問、故事、演戲......等。將知識性的講述融入互動式的教學活動。課程活動結束後，學習者可以應用課程活動所學的知識或技能發揮 3 個應用課題，將所學的內容分享及教導成態度與行為。

課程流程：
1. 破冰活動：自我介紹、如何分組？
2. 課堂活動：地圖好好玩、世界咖啡館、撿出好果子、繪本好好玩、635 默寫式激盪法、紙飛機.......。
3. 評量活動：課堂加分、同儕互相觀摩、學習、評分.........。
論文发表摘要
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<th>A1 13:30-14:10 教師論文發表（國際會議廳 AC226）</th>
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<td>主持人：李傳房 教授</td>
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<td>教師創新教學行動研究</td>
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<tr>
<td>「喪禮文化及其就業市場」課程應用教學模式成效之探討：以某科技大學為例</td>
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<tr>
<td>學生參與社會創新教材教法</td>
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<td>以共創工作坊進行社區活化 - 以彰化縣南郭郡守共創活動為例</td>
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### 論文發表（國際會議廳 AC222）

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<td>林家羽（國立成功大學 工業設計學系碩士生）、馬敏元（國立成功大學 工業設計學系教授）</td>
</tr>
<tr>
<td>教師創新教學行動研究 以差異化教學實施國小混齡數學補救教學之行動研究</td>
<td>徐慧中（國立屏東大學 科普傳播學系數理教育研究所碩士生）、徐偉民（國立屏東大學 教育學系教授）</td>
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### 論文發表（國際會議廳 AC224）

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<td>王得貴（明志科技大學 電機系助理教授）</td>
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<td>教師創新教學行動研究 程式設計課程導入合作學習分組策略之研究</td>
<td>徐濟世（國立雲林科技大學 資訊管理系副教授智慧商務研究中心主任）、蔡文龍（僑光科技大學 多媒體與遊戲設計系助理教授）</td>
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| 教學實踐研究 | 張黎琴  
醒吾科技大學  時尚產業經營管理系講師  
中央大學企業管理學系博士生 |
| 其他教學創新研究 | 陳祈恩  
國立雲林科技大學  設計學研究所碩士生  
遊元良  
國立雲林科技大學  設計學院工業設計系助理教授 |
<p>| 問題導向學習在商管學院企業資源規劃課程教學的應用研究 |  |
| 創業學習模式對創新思維的影響之研究 | |</p>
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<td>教師創新教學行動研究</td>
<td>食在有安全課程學習成效分析</td>
<td>魏明敏  國立雲林科技大學 通識教育中心副教授 陳維東  國立雲林科技大學 通識教育中心營建工程組 博士生 陳維東  國立雲林科技大學 通識教育中心營建工程組 博士生兼未來學院院長</td>
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<td>其他教學創新研究</td>
<td>民間糕餅模雕刻藝術與傳統節慶之研究-以傳統糕餅美食為例</td>
<td>趙于慧  多元學術研究者 研究員</td>
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<td>新興教育科技與數位學習</td>
<td>探討實體與虛擬媒介對設計團隊合作之影響-以使用者旅程圖為例</td>
<td>蘇佳君  國立成功大學 工業設計研究所碩士生 陳璽任  國立成功大學 工業設計學系 助理教授</td>
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大專院校課程推薦系統與學系學用合一之探究

沈碩彬 1、林家禎 2
靜宜大學招生專業化辦公室 1，靜宜大學資訊管理學系 2
sbshen0707@pu.edu.tw 1, mhlin3@pu.edu.tw 2

摘要

本校與榮光科技有限公司合作進行「課程推薦系統」，並與 1111 人力銀行合作介接就業端資料，針對學系本身與學系課程之學用合一程度進行探究。研究方法包括描述性統計與演算法，其中在演算法部分，核心是分析兩段文字（職務/課程、課程/課程）的語意相關性，意即將每個課程文字（課程標題、分類、等等）以及每個職務文字分別轉換成高維空間的向量，每個向量有 512 個參數，代表一門課程或是一個職務的特徵，再將所有向量，兩兩計算空間中的距離，距離越近代表越相關。本系統尚在開發中，目前初步結論如下：一、課程推薦系統：把本校課程與 Udemy 或 Coursera 之類似課名進行相似度比對，可供學生當作補充的學習資源，亦可供教師精進教學；二、課程學用合一程度：利用演算法計算課程與相關職務之關聯性，並比對「各學系相關職務類表」，計算出課程學用合一的程度；三、畢業生就業學用合一程度：利用登錄在人力銀行的就業資料，比對「各學系相關職務類表」，計算出學系畢業生就業之學用合一的程度。研究結果可供本校各學系調整與精進課程結構，師、生、課皆能夠與時俱進，以更加符合時代產業所需。

關鍵詞：課程推薦系統、學用合一、演算法
A Study on the Course Recommendation System and Knowledge-Action Integration in Universities

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Abstract

The researchers cooperate with Glory Technology to carry out the "Course Recommendation System" and cooperate with the 1111 Job Bank to explore the degree of knowledge-action integration. Research methods include descriptive statistics and algorithms. In the algorithm part, the core is to analyze the semantic relevance of two paragraphs (job/course, course/course, etc.). It means each course text (course title, classification, etc.) and each job text is converted into a vector of high-dimensional space, and each vector has 512 parameters, representing a course or a feature of the position. Then we calculate the distance between the two sets of all the vectors, and the closer distance represents the more relevance. The system is still under development. The preliminary conclusions are as follows: 1. Course recommendation system: Comparing the similarity of the school curriculum with the similar names of Udemy or Coursera, which can be used as supplementary resources for Students and teachers. 2. Knowledge-action integration of courses: Calculating the relevance of the curriculums and related positions and comparing the relevant job categories in each department to understand the degree of knowledge-action integration of courses. 3. Knowledge-action integration of departments: Using the employment information registered in the job bank and comparing the relevant job categories to calculate the degree of knowledge-action integration of departments. The research results can be used to refine the courses. Teachers, students and classes can better meet the actual needs of the times.

Key words: Course recommendation system, learning integration, algorithm
「喪禮文化及其就業市場」課程

應用教學 123 模式成效之探討：以某科技大學為例

黃芝勤¹、胡夢鯤²

摘要

死亡、喪禮長久以來都是國人避諱的話題，近年來受到父後七日、送行者、出境事務所⋯⋯等電影、電視劇，及殯葬業的相關新聞報導的影響，國內對於喪禮文化及就業市場逐漸受到重視。研究者長期進行殯葬相關研究與教學，喪禮是人生不可避免的階段，理應認識死亡、面對喪禮。加上殯葬業的百萬年薪的新聞報導，往往造成大學畢業剛進入職場的社會新鮮人對於殯葬業的迷思與嚮往。

本研究目的 1. 分析大學生參與喪禮經驗、對於「喪禮文化及其就業市場」課程的修課原因或期待，以及對殯葬服務就業市場的迷思。2. 探討應用教學 123 模式後，大學生對於「喪禮文化及其就業市場」課程的學習成效與困境。3. 根據研究結果，提出未來喪禮文化及其就業市場教學方案實施之參考。

研究方法除了研讀國內外喪禮文化、殯葬服務業執業現況⋯⋯等相關研究成果與文獻，並以中部某科技大學為研究場域，進行田野調查，使用訪談法、觀察法進行研究，以實踐「喪禮文化及其就業市場」課程的教學 123 設計模式的方案。

本研究在學校以學生問題導向為教學設計，透過教學、活動、小組討論、演講，幫助學生了解喪禮文化及其就業市場。搭配校外教學，經由喪禮告別式的觀察、殯葬儀儀服務人員的專訪等方式，讓學生在實際喪禮情境中，體驗喪禮文化及其就業市場。

關鍵詞：喪禮文化、殯葬服務業就業市場、教學 123 模式
The Effectiveness of Applying “123 teaching model” to the Course of “Funeral Culture and Its Job Market”- Took A University of Science and Technology as Example

Chih-Chin Huang¹ · Meng-Ching Hu²

Abstract

The researcher has been undertaking relevant researches and teaching in the funeral industry for a long time. Funeral is inevitable in our life. We should recognize death and the funeral. To the news report, the employees in the funeral industry made 1 million NT dollars per year. This often leads the new graduates to have a myth toward the funeral industry. In the other way, look forward to working in this industry.

The objective of this research included:
1. Analyzing the experiences of the university students attending funeral; The reason why they selected the course” Funeral Culture and Its Job Market” or their expectation for this course. As well as their myth toward the job market of the funeral service industry.
2. Discussing the learning effectiveness and the obstacles that the university students faced after applying “123 teaching model” to the course” Funeral Culture and Its Job Market”
3. Based on the research outcomes, providing references to the implementation of the teaching project toward the course “Funeral Culture and Its Job Market”

The methods of the research contained studying the domestic and foreign funeral cultures, the current situation of practicing in the funeral service industry, and other relevant research outcomes and literatures. It also took a university of science and technology in the middle Taiwan as the research area, conducting field researches by using interview and observation. In order to apply“123 teaching model” to the course of “Funeral Culture and Its Job Market”.

This research course helped the university students understand the funeral culture and its job market through teaching, arranging activities, having group discussions, holding speeches. Along with scheduling field trips, via observing the process of the funeral and having the interview with
the funeral service agents. Students can realize more about the funeral culture and its job market in the real funeral situation.

**Keywords:** Funeral culture, Funeral service job market, 123 teaching model
透過共創工作坊進行社區活化

-以彰化縣南郭郡守官舍群共創活動為例

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摘要

南郭郡守官舍群約於 1922 年建於彰化縣彰化市的日式宿舍群，至今已有近百年的歷史，隨著時代的更迭，部分官舍面臨荒廢、閒置的問題。本研究以活化南郭郡守官舍群為目的，邀請南郭國小資優班師生一同參與社區活化共創工作坊，過程中以觀察法與訪談法了解師生對於共創工作坊的想法，並根據研究者實際參與此次社區活化共創工作坊的經驗，整理並提出相關建議，以提供未來社區活化活動與共創工作坊之參考。

本研究結果如下：以老師的觀點對此次共創的想法：1. 文化教育融合共創能讓學生以體驗學習的方式沉浸於在地文化當中，藉此提升學生對於在地文化的認知，加強學生對於在地的情感連結，2. 老師認為共創製作過程應考慮小學生手作能力，若操作難度太高反而會令學生感到挫折甚至造成危險；以學生的觀點對此共創的想法：3. 以水泥灌注的方式製作作品很有趣，也能用不同的角度探索南郭郡守，未來也會對類似課程與文化感興趣。

本研究以體驗學習為基礎，透過共創工作坊進行社區活化活動，師生皆認為工作坊內容新奇有趣，學生在過程中能以不同的觀點認識南郭郡守，且將成品展示於戶外能讓更多在地人認識並了解南郭郡守。未來，此共創模式也能應用於其他在地聚落，促使社區活化活動更加蓬勃。

關鍵字：體驗學習、南郭郡守官舍群、社區活化、共創工作坊
By co-creation workshop to conduct community activation
- take the co-creation activity at the official residence of Nanguo magistrate in Changhua county as an example

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Abstract

The official residence of Nanguo magistrate - a Japanese-style dormitory group which was built in Changhua county, Changhua city in about 1922, it is nearly one hundred years old, with the change of the times, some of the official residences face the problem of deserted and useless. This study aimed to activate the official residence of Nanguo magistrate, invited Nanguo elementary school gifted class teachers and students together to participate in the community activation co-creation workshop, reinterpreted the characteristics of centuries-old Japanese architecture from the perspective of local people. In the process, by methods of observation and interview to understand the opinions of teachers and students about the co-creation workshop, and based on the experience of the researchers actually participating in the community activation co-creation workshop, organized and made relevant suggestions in order to provide reference for future community activation activities and co-creation workshops.

This study explored the feelings of the co-creation workshop for teachers and students through the methods of interview and observation. The opinions from the teacher's point of view: The integration of cultural education and co-creation can enable students to immerse themselves in local culture in the way of experiential learning, in order to enhance students' awareness of local culture, strengthen students' emotional connection to the local. Beside, the teacher believed that the co-creation process should consider the handmade ability of elementary school students, if the operation is too difficult, it will make students feel frustrated or even dangerous. The opinions of this co-creation from the student's point of view: It was fun to create works by cement infusion, and also can explore Nanguo magistrate from different angles. In the future they will also be interested in similar courses and culture.

This study conducted community activation activities through the co-creation workshop, both teachers and students though that the workshop contents were novel and interesting. Students can learn Nanguo magistrate in different perspectives during the process, and the display of the finished products in the outdoor can let more people know and understand Nanguo magistrate. In the future, this co-creation mode can also be applied to other local communities, promote community activation activities to be more flourishing.

Key words: experiential learning, official residence of Nanguo magistrate, community activation, co-creation workshop
探討自主學習的魅力因子－以高中職及大學生為例

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摘要

觀望目前台灣的教育環境，從過去到現在都極為重視升學制度，雖然近幾年來，不管是在師資培育課程或是教學現場，越來越強調因材施教的重要性，但仍有許多學生的學習行為及念書風氣是被動的。事實上，學習的本質應該是主動的。在台灣，從小學教育、中等教育到高等教育，在課程綱要裡都有加入鼓勵學生自主選擇的學習課程，來鼓勵推動自主學習的風氣，希望學生可以從自我選擇課程中，慢慢培養自動自發的習慣。當教育制度及社會大眾對於學習的型態已經與以往的形式有所不同，在學習環境的選擇及學習方式也會有所不同。根據 Bennett 在 2005 年《an EDUCAUSE》提到，環境對學生的學習歷程是具有影響力。因此本研究目的為探討學生在選擇課後學習環境的魅力因子為何，提供未來透過這些因子進一步探討在觀察是否能有效培養學生由被動學習，提升到主動學習的習慣養成。本研究之實驗步驟可分為兩部分，第一部分是質性訪談，第二部分為量化研究。質性訪談的第一步驟為實驗的前測，利用涉入度量表篩選出6到8位具備主動學習行為的高中職學生與大學生；第二步驟將利用質性訪談此兩個年齡層的學生，訪談過程利用 KJ 法蒐集受測者對於環境中不管是軟體或硬體之影響因素、感受及喜好度；實驗第三步驟屬於量化研究，是將透過魅力因子進行集群分析，將分析結果進行分群，製作成問卷，發放給16至22歲的高中職學生及大學生填寫，問卷回收後將數據進行統計分析其結果。透過質性訪談及量化問卷的結果可得到高中職及大學的學生族群在進行課後學習行為時，選擇的環境及影響選擇之因素，利用集群分析找到不同類型的魅力因素，本研究之分析數據可成為有效培養並提升自主學習行為習慣之環境設計建議原則。

關鍵詞：學習環境、學習行為、自主學習
Exploring Attractive Factors for Self-motivation Learning: 
two cases studies for high school and university students

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Abstract

Looking forward to the current educational environment in Taiwan, we have attached great importance to the education system from the past to the present. Although in recent years, whether in the teacher development curriculum or the teaching scenes, the importance of teaching students in accordance with their aptitude is increasingly emphasized, but there are still many students' learning behaviors and the atmosphere of studying is passive. In fact, the essence of learning should be active. In Taiwan, from primary education to secondary education and higher education, some courses are set in the syllabus that encourage students to have their own choices choosing their favorite courses to encourage the morale of self-motivative learning. Students are expected to develop the habit of automatic spontaneous from self-selected courses. When the educational system and the public's style of learning are different from the previous forms, the choice of learning environment and the way of learning will also change. According to Bennett’s statement in 《an EDUCAUSE》 in 2005, the learning environment has influence on the learning process of students. Therefore, the purpose of this study is to explore the factors that make students choose the learning environment after class, and to explore the future through these factors to explore whether it can effectively cultivate students' habits from passive learning to active learning. The experimental steps of this study can be divided into two parts, the first part is qualitative interviews and the second part is quantitative research. The first step of the qualitative interview is the pre-test of the experiment. Using the involved metrics to screen out 6 to 8 high school students and college students with active learning behavior. In the second step, qualitative interviews will be conducted between the students of the two age groups, the interview process uses the KJ Method to collect the influence factors, feelings and preferences of the participants on the software or hardware in the environment. The third step of the experiment belongs to the quantitative study, which is the cluster analysis of the results obtained through the KJ Method. The results obtained from the interviews were clustered, and the results were grouped into questionnaires and distributed to high school students and college students between aged 16 to 22 to fill out the questionnaires. The data were analyzed and the results were statistically analyzed. Through the results of qualitative interviews and quantitative questionnaires, the factors of the environment and influence selection of the students' groups in high school and university can be obtained, and the cluster analysis is used to find different types of attractive factors. The analysis data of this study can be an environmental design suggestion principle that effectively cultivates and enhances self-motivative learning behavior habits.

Key words: Learning Environment, Learning Behavior, Self-motivation Learning
以差異化教學實施國小混齡數學補救教學之行動研究

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摘要

在臺灣的教育體系中，少子化的問題對國民教育造成各種衝擊，連帶受到其他原因影響，使得參加補救教學班的學童人數減少，編班方式不得不採小班、跨年級混齡等方式實施；又因學生的年齡、家庭背景、學習程度上具有相當差異，故研究者選用差異化教學作為教學法。研究對象為高雄市某國小中低年級之學生，該國小為開班人數未達標準因現實考量進行跨年級混齡編班制的數學補救教學班，實施為期兩週每日授課四節，共四十節的暑期補救教學。本研究的研究目的有：一、探討差異化教學實施數學補救教學前，學童的學習成就表現。二、探討以實施差異化教學行動研究的歷程和學童的學習表現與自我效能感。本研究採質性行動研究法，分為研究準備期、研究進行期、研究總結期三階段進行；研究準備期是依蒐集各項資料後選定欲進行補救教學之單元與訂定教學計畫，並對研究對象進行訪談與自我效能量表的填寫；研究進行期以差異化教學法進行數學補救教學；研究總結期以實施補救教學後測與自我效能問卷為判斷差異化教學法是否能有效提升學童的自我效能與學習成就的依據，進行研究總結。研究結果發現：一、實施差異化教學對於學童在自我效能感之提升有助益。二、實施差異化教學對於學童在學習成就之提升有助益。

關鍵詞: 差異化教學、國小混齡、數學補救教學
Action Research of Mathematics Remedial Instruction by Differentiated Instruction Strategy on a mixed-age class

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Abstract

In Taiwan's education system, the problem of low birth rate and population decline has caused various shocks to compulsory education. For example, it results in a reduction in the number of students participating in remedial classes, so that we have to find the way out, such as the introduction of mixed-age class. Due to varieties of the difference of these students, the researcher chooses differentiated instruction as the teaching method. The research was aimed at students in lower grade and intermediate grade of the elementary school in Kaohsiung, where the number of people in the class was not up to standard, need to reply on the mathematics remedial instruction class by a mixed-age class, with 4th period of 2 weeks of daily remedial teaching instruction and a total of 40th period. The purpose of this study is: first, to explore the change of self-efficacy of students after the implementation of mathematics remedial instruction with differentiated instruction. Second, to explore the change of learning achievement of students after the implementation of mathematics remedial instruction with differentiated instruction. In this study, the method of qualitative action research is divided into 3 stages, the study preparation period, the research period and the summary period of the study. The preparation period of the study is to select the unit and the teaching plan for remedial instruction according to the collection of various data, and to interview the students and fill in the Mathematics Self-Efficacy Instrument scale. The research period of the study is applied by differentiated instruction strategy on a mixed-age class. The summary period of the study is to summarize and determine whether the differentiated instruction can effectively improve the self-efficacy and learning achievement of the students. The results show that: first, the implementation of differentiated instruction is helpful for children to improve their sense of self-efficacy. Second, the implementation of differentiated instruction is helpful for students in the improvement of learning achievements. Third, the implementation of differentiated instruction for the intermediate grade students in the improvement of learning achievement is more obvious in the lower grades of children.

Key words: Differentiated instruction, Multiage teaching, Remedial teaching
問題式教學增進科技大學工程學院學生之主動獨立學習力

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摘要

現今的學習方式已是多面向的互動而非教師單向的給予教材，透過師生、同儕的互動來激發創新、創意學習的火花，從而獲得更好的成果。問題的作用是促進獨立思考與學習的開端。為了要培養學生自主獨立學習的能力，提問就是最重要的關鍵。

本研究中我們使用問題式教學來增強學生的自主學習能力。透過問題式教學，來鼓勵學生回答教師的問題並主動提出問題，學習如何管理自己的學習歷程與檔案更，並且進一步地學會頻繁地與彼此學習互動。經由實驗和訪談中顯示多數同學認同問題式教學可以幫助他們在課堂上進行提問和理解。因此問題式教學確實提供諸多好處幫助學生達到主動學習的目的，也提供了老師一個良好的教學回顧之方法。

關鍵詞：發問、主動獨立學習力、問題式教學、主動學習、教學回顧
Based Instruction Enhances the Self-directed Learning of the Student of the College of Engineering of the University of Technology

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Abstract

Learning nowadays is two way route, except for learning materials from the teacher, we emphasize its more interactive nature which should be activated from the students to get better outcomes. Questioning is usually the start point of thinking and learning. In order to bring up students’ capability of self-directed learning and thinking, questioning is the key point.

In this study, we use problem-based instruction enhances the self-directed learning of the student. Through problem-based instruction, students are encouraged to answer the teacher's question and ask their questions to learn how to manage their studies personally further to interact with each other more frequently. The experiment results indicate that most of the students agree problem-based instruction can help them in questioning and understand during the class. So problem-based instruction indeed provides benefits of improving students’ active learning, and it also provides a good method for teacher to do the teaching reviewing during the class.

Keywords: Questioning, self-directed learning, problem-based instruction, Active Learning, Teaching Reviewing
程式設計課程導入合作學習分組策略之研究

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摘要

教育部運算思維推動計畫提出資訊科技領域課程著重於學生運算思維能力的培養，由電腦科學相關知識的學習，訓練邏輯性與系統化思考，同時藉由資訊科技技術的實作，增強運算思維的解決能力、應用能力與創新思考能力。程式設計課程就是上述能力的重點課程。現今學生對於思考性的學科非常排斥，加上學習程式設計同時容易產生挫折感。有鑑於此，本研究在程式設計課程中導入不同合作學習的分組方式，期望能幫助學生提升學習成效與資訊科學內涵，內化運算思維，進而發展創新思考與團隊合作能力。

本研究實驗對象為僑光科技大學多媒體與遊戲設計系三年級忠孝兩班共75位學生，實驗前一個月對2班進行前測，接著進行合作學習分組策略，忠班採自由分組；孝班採前測成績進行S型的異質分組，前測完成之後再進行為期兩週合作學習的實驗教學，實驗教學之後對課程進行後測，並由前後測將學習成效進行t測定與單因子變異數分析。實驗目的有二：一是瞭解合作學習的異質分組與自由分組策略對學生學習程式設計學習成效的影響力；二是瞭解設計、資電與商管學群的學生在不同合作學習分組方式的學習成效，提供給教師未來授課進行參考。

關鍵詞：合作學習、合作學習分組策略、程式設計
A Study on the Introduction of Collaborative Learning Grouping Strategy into Programming Course

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Abstract

The Ministry of Education’s computational thinking promotion plan suggests that the courses in the field of information technology focus on the development of students’ computational thinking ability. Students’ logic and systematic thinking should be trained through the learning of computer-science-related knowledge, and their problem-solving ability, application ability, and innovative thinking ability should be enhanced through the practices of information technologies. Programming courses are critical courses for developing the abilities mentioned above. Nowadays, students dislike thinking-based subjects. Besides, learning programming can easily lead to a sense of frustration. Therefore, this study intends to introduce a different collaborative learning grouping approach into programming courses, in order to help students improve learning effectiveness and information science connotations, internalize computational thinking, and further develop innovative thinking and teamwork abilities.

The subjects of research of this study were 75 students from Class 1 and Class 2, Grade 3, Department of Multimedia and Game Design, Overseas Chinese University. One month before the experiment, students from the two classes were tested (pretest) and grouped based on the strategy of cooperative learning. Students from Class 1 were grouped freely, while those from Class 2 were grouped in the way of S-type heterogeneous grouping based on the results of their pretest. After the pretest, experimental teaching that lasted for two weeks was carried out. Then, a post-test was conducted and the learning effectiveness went through a t-test and one-way ANOVA according to the pretest and post-test. The experiment had the following two purposes: 1) To understand the influence of heterogeneous grouping and free grouping of cooperative learning on the learning effectiveness of learning program design of students; 2) to understand the learning effectiveness of students of design, information and electrical engineering, and business management with different grouping methods of cooperative learning so as to provide reference for teachers.

Key words: Collaborative Learning, Collaborative Learning Grouping Strategy, Programming
商管教育之藝企合作教學實踐研究

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摘要

本篇論文旨在探究如何將表演藝術融入到商管教育，以促進學生學習、精進課程設計、創新教學方法，並建立教師教學實踐研究的專業。研究方法為質化的「紮根理論（Grounded Theory）」，並用運用參與觀察、期末課程意見調查表、參與者集體撰寫活動新聞稿、開放式敘述型問卷來搜集資料。本論文的研究場域為作者在任教學校研究所（行銷及產業組）開設的「藝企合作（Arts and Business Cooperation）」課程，以及在其中所帶領的「武士遊戲（The Samurai Game®）」。本教學實踐研究的結論有三：實證「藝術為本的學習方法（Arts-Based Methods）」—採用肢體、戲劇、故事、遊戲等藝術形式作為學習媒介，能拉近教師與學生的距離，催化學生的學習興趣，培育學生的專業素養。二、發展「表演藝術為本的教學法（Performing Arts-Based Pedagogy）」，其特色是能將表演藝術中的技巧轉化為學生的軟實力；並且提供實際經歷表演藝術的過程，使學生能反思自身的態度、行為模式與價值觀。三、邀集企業人士一同參與「武士遊戲」，將「藝企合作」的課堂，設計成為學生與產業人士實質接觸與共同學習的平臺。

關鍵詞：表演藝術、商管教育、紮根理論、藝企合作
Teaching Practice Research on
Arts & Business Cooperation in Business Education

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Abstract

This research aims to investigate how to apply performing arts into business education to improve students’ study, advance course design, and innovate teaching method, as well as to build a profession on teaching practice research for teachers. The main research methodology is grounded theory. The methods to collect data include participant observation, terminal course evaluation, collective news release writing, and open narrative questionnaire. The research context is the course, Arts and Business Cooperation, Graduate Level for Arts Marketing and Industries, where the researcher teaches at National Taiwan Normal University. The research leads The Samurai Game® for that course. This research concludes: First, Arts-Based Methods, using movements, drama, storytelling, and games as learning materials, can shorten the distance between teachers and students, facilitate students’ learning interests, and develop professional literacy for students. Second, develop Performing Arts-Based Pedagogy which is characteristic of transforming performing arts skills into students’ soft power and providing students with the process of experiencing performing arts to reflect on their attitudes, behavior models, and values. Third, design the course as a collective learning platform to connect students with industry people.

Keywords: Arts and Business Cooperation, Business Education, Grounded Theory, Performing Arts
MOOC學習風格研究-經濟學課程為例

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摘要

本文為本研究者107年教育部教學實踐研究計畫之前導研究成果，研究背景於整體環境而言，主要是現今學生的程度差異日益明顯，國內少子化與經濟景氣不佳的雙重壓力下，學校招生迫於現實更難適度篩選或分班，同時，本研究者於磨課師（MOOCs：Massive Open Online Courses，大規模開放式線上課程）之開課歷程中，不斷面對程度差異更大之學習者，因而產生研究動機：先了解特定班級之學生學習風格偏好，同時若能在課前讓每位學習者都能先掌握自己的學習風格特徵，除可能提升其學習動機與自學效率，若再整合其他人之學習風格特徵，透過線上課程可不斷修正與擴充之特性，更可能做到差異化而促進更有效之教學，真正落實「以學習者為中心」、「因材施教」之目的。

本研究目的：針對磨課學習者，分析不同學習族群之學習風格並揭露其間之主要差異（含性別之差異），以及各族群中學習風格相對強烈之特徵，研究對象為同一門「經濟學」磨課師課程之台灣大學生、大陸大學生與台灣優秀國高中生共分三族群（最後一族群修課需特定條件，詳見內文）。

本研究方法是以Felder-Silverman學習風格模型為基準，透過問卷調查法經計算結果個別呈現四種面向風格：訊息之「處理」、「感知」、「接收」、「理解」以及各兩維度類型（共八維度）之偏好，再以「假設檢定（ANOVA）」方式，探討分析台灣、大陸大學生以及台灣國高中生三大族群之間的主要學習風格差異，同時檢定族群內「性別」因素是否造成顯著之差異，由於Felder-Silverman學習風格模型理論指出：「中強度」風格學習者若提供其合適學習環境或方法，能有助於其學習，而「高強度」風格學習者若無提供其適當的學習環境或方法，該學習者則難以學的好，故本研究進一步針對各族群八維度之「中高強度」學習者所佔比例做比較，以呈現更細部之風格特徵傾向差異。

本研究主要結論為：透過線上問卷實際施測，磨課不同族群之學習者呈現以下主要之學習風格差異：台灣大學生與大陸大學生之學習風格於訊息之「處理」及「感知」兩項存
在顯著之差異（另兩項風格則無），大陸大學生之學習風格其「性別」因素則在訊息之「處理」方面具顯著差異（另三項風格則無），而台灣大學生與優秀國高中生之四項學習風格皆無顯著差異，同時「性別」因素於上述兩類族群學生中，四項學習風格皆無顯著之差異。

關鍵詞：磨課師、學習風格、經濟學課程
The Learning Styles within MOOC: A Case Study of Economics Course

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Abstract

Students have different strengths and preferences in the ways they take in and process information which is to say, they have different learning styles. When the learning styles of most students in a class and the teaching style of the professor are seriously mismatched, the students are likely to become uncomfortable, bored and inattentive in class, do poorly on tests, the curriculum and themselves, and in some cases change to other curricula or drop out of school.

Based on the MOOCs experiences, the purposes of this study is to find out the differences between groups of learners including college students from Taiwan and mainland China, and outstanding middle and high schools students from Taiwan.

This paper uses the Index of Learning Styles (ILS) to assess preferences on four dimensions (active/reflective, sensing/intuitive, visual/verbal, and sequential/global) of a learning style model formulated by Richard M. Felder and Linda K. Silverman. The ILS results provide an indication of an individual's learning preferences and an even better indication of the preference profile of a group of students (e.g. a class).

The main conclusions of this study are: the learning styles of Taiwanese college students and mainland university students are significantly different on the first and second dimensions, and the "gender" factor of the mainland students makes significantly different on the first dimension, and there is no significant difference between the four learning styles of Taiwanese college students and outstanding middle and high school students. At the same time, the "gender" factor among the above two groups of students, there is no significant difference in four learning styles.

Key words: MOOCs, learning styles, economics course
法學教育的案例式教學法之問題與實踐
－以『生命倫理與法律專題』課程為例－

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摘要

本人開設『生命倫理與法律專題』之選修課程，論及基因、受精卵、胚胎、人工生殖科技技術時無法詳細介紹，且表達法律時的高度抽象性、理論性，以致結合醫學與法律學門之該『生命倫理與法律專題』跨領域課程，產生“教學者不易教，學習者不易學”之困境，在教學現場上時有產生教學者表達專業知識與學習者聆聽吸收理解之雙方落差。此外，案例式教學法有上述本質與實施存有限制，但這些限制如何解決之？本文試圖提出突破與解決案例式教學法的本質與實施限制之對策。並且由本論文所擬定的這些對策，能夠具體實踐成為吸引學生選修該課程之因素。本論文主張案例式問題為導向之對話式教學方法，其設計有助於學生邏輯推演思辨能力與引發學習興趣。本論文也應當反省思考對治案例式教學法的本質與實施限制之這些解決策略，是否果真有其成效存在？為了提升本「生命倫理與法律專題」之課程教育品質，本論文發展出案例式教學與對話式教學方法，以達到法學理論與案例相提並重，師生共同體驗教學相長美好之教學理想情境。

關鍵字：生命倫理與法律、跨領域、案例式教學、對話式教學方法
The Problems and Practices of the Case-based Teaching Method in Legal Education

- To Take the Course of "Bioethics and Law Topics" As an Example -

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Abstract

I have chosen the Course of "Bioethics and Law Topics" as elective course, which can not be introduced in detail when it relates to genes, fertilized eggs, embryos, artificial reproductive technology, and the high degree of abstraction and theory in expressing the law, so that the interdisciplinary Course of "Bioethics and Law Topics" as the combination of medicine and law has the dilemma of "teachers are not easy to teach, learners are not easy to learn". At the teaching scene, there is a gap between the teachers to express their professional knowledge and the learners to listen and understand. In addition, the case-based teaching method has some limitations on the above nature and implementation, but how can these limitations be addressed? This paper attempts to propose countermeasures to break through and solve the limitations on the nature and implementation of the case-based teaching method. And the countermeasures formulated by this paper can be specifically practiced to attract students to take the course. This paper advocates a case-based, problem-oriented, conversational teaching method, which is designed to help students to develop logical, speculative ability and initiate learning interest. This paper should also reflect on these countermeasures and solutions to the limitations on the nature and implementation of the case-based teaching method. Are they really effective? In order to improve the quality of curriculum education in my Course of "Bioethics and Law Topics", this paper develops the case-based teaching and conversational teaching methods to achieve the same emphasis on legal theory and case, and teachers and students jointly experience the ideal teaching ideal situation.

Keywords: Bioethics and Law, Interdisciplinary, Case-Based Teaching, Conversational Teaching Methods
托育服務創業案例教學研究

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摘要

本研究目的旨在探討創業案例教學實施於大學幼保系托育服務經營與管理課程之成效；研究對象係 39 位修課學生成員與 4 位托育服務領域實務菁英組成「創業教戰共師團隊」，分組 8 隊學習社群，以合作行動研究方法，透過實際參與全國大型創業競賽為實踐方案，將創業相關理論融入托育服務領域經營。授課內容除提供主題閱讀教材外，以創業小組討論合作學習方式，逐漸形成各類托育服務主題創業企劃書。研究工具以主題報告與創業檔案評量作為形成性評量，參與創業競賽成果發表、企劃書編撰與個人省思為總結性評量等作為分析。研究結果發現，透過小組共師創業團隊方式，實際參與創業企劃競賽的實作歷程，能有效引導學生主動學習、參與討論；同時，能發揮多元思考解決問題與支援團隊合作等態度，有助於托育服務經營與管理專業能力的養成。

關鍵詞：托育服務、案例教學、創業
The Case Method of Instruction for Child Care Services

Entrepreneurship

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Abstract

The study is to promote child care service personnel quality, using the Case Method Instruction (CMI) for undergraduate school course: The management for child care service. The study based of entrepreneurship theory and CMI learning to proceed with 4 child care service outstanding directors to cooperative action study. Also provide “The subject of Entrepreneurship Management of child care service business” writing by researcher as the reading material. The child care business entrepreneurship teams discuss and planning issue of administration organization, family activities, business marketing and public relationship. The study collect data by workshop, observation, interview and documents, analysis for qualitative and quantitative. Through the entrepreneurial learning group approach, participate in national competition of creative marking planning. It can effectively guide students to actively learn and more expression in the discussion. Also they can bringing in multi-thinking and problem-solving attitude to support teamwork cooperation, which develop the child care service professional management competency.

Key words: child care services, case method of instruction, entrepreneurship
問題導向學習在商管學院企業資源規劃課程教學的應用研究

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摘要

台灣近年來科技大學商管學院企業資源規劃課程目標為輔導學生於大四至校外實習前
習得企業資源規劃(Enterprise Resource Planning, ERP)相關知識及技能，進而考取 ERP 規劃
師或 ERP 軟體應用師各系所培養職能相應之模組證照，於實習媒合階段即能符合企業徵才
需求獲中大型企業面試資格，增進學生提早至各產業中大型企業發展進而成為中階主管機
會。因應近年來科技大學商管學院學生學習態度之變化，如何於課程中完整講述中大型企
業執行整體企業資源規劃各項商業活動在各職能部門間內部控制流程設計及分權管理之要
義，使多數學生在赴企業實習前能體會各流程控制點之重要性及關連性，培養其運用技能
以符應業界需求，此為本人想要達成的教學研究目標。問題導向學習教學相較於傳統的教
學方式，經許多研究證實運用問題導向學習(Problem-Based Learning, PBL)能有效提昇學生
學習成就與問題解決能力，故此種學習方式對於科技大學商管學院企業資源規劃課程教學而
言，應具有相當的採用價值。本研究試圖運用 PBL 培養學生瞭解、分析與解決問題及歸納
能力，以達學習之最高效果，探討以 PBL 教學法應用於商管學院企業資源規劃課程內部控
制議題之教學成效。課程實施，先以情境教學的方式導出問題情境及企業願景前題，引導
學生瞭解企業實務問題，由學生自行討論選擇廠商，主動學習、知識分享，針對企業資源
規劃課程教學過程中，學生對專業知識自我學習及相互學習的態度加以評量分析。本研究結
果發現，(1)教師透過前測的半結構式問巻結果進行適當分組，學生互動頻率高，合作學習
效果良好(2)學生能從實務個案問題，主動嘗試透過各種媒體及方法尋求答案，自動自發學
習，增強正面的學習態度(3)透過各組不同的企業分享實務情境及學習過程，增進教學課程
學習的廣度及透過同儕學習增強正面學習態度(4)本實驗課程加強內部控制之重點學習，有
助於學生考取 ERP 軟體應用師證照。

關鍵詞：企業資源規劃、問題導向學習、內部控制
Application of Problem-Based Learning in the Teaching of Enterprise Resources Planning Courses in Business Administration

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Abstract

In recent years, the goal of the Enterprise Resource Planning course is to help students to acquire ERP related knowledge and skills in Taiwan. We expect the student can meet the needs of the enterprise, obtain the interview qualifications and enhance the development of large-scale enterprises among students in various industries in order to become a middle management in the future. How to fully teach the implementation of the overall Enterprise Resource Planning and various business activities in various functional departments, and the internal control process design and decentralization management is essential to enable most students to understand the importance and relevance of each process control point before they go to the company for an internship. The goal of teaching practice research is to develop their application skills, and to obtain licenses to meet industry needs. The Enterprise Resource Planning course covers the cross-disciplinary problems of business schools. This study aim to use PBL to train students to understand problems, analyze and solve problems and summarize them in the teaching process. This study was conducted using a class action research method to explore the teaching effectiveness of the Problem-Based Learning method applied to the internal control issues of the Enterprise Resource Planning course of the School of Business Administration. The results have found that (1) Students are properly grouped through pre-tested semi-structured questionnaire results. Students have high frequency of interaction and good cooperative learning. (2) Students can take the initiative to find answers through various media and methods from practical case issues, learn spontaneously and enhance positive learning attitudes. (3) Students share the practical situation and learning process through different groups, enhancing the breadth of learning courses and enhancing positive learning attitude through peer learning. (4) This experimental course strengthens the key learning of internal control and helps students to obtain ERP software application licenses.

Key words: Enterprise Resource Planning, Problem-Based Learning, Internal Control
創業學習模式對創新思維的影響之研究

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摘要

近年來，創業教育受到高度的關注，政府在各大學推動創業活動和教育，投入大量資源鼓勵學生進行在校創業。在設計產業方面，越來越多設計師從校園畢業後投入創業行列，如自主研發設計產品、建立自有品牌等。設計教育有了新的走向，在設計教育教學現場導入創業行動，透過內在開創性的思維活動，重組外在創業資訊，包括新概念的發想、新方案的決策等訓練，以培育具備創新型、創業型設計人才。要達成此目標，其中一項關鍵要素在於學習者學習模式的轉變，亦即在進行創業及創意實踐的過程，透過概念的學習與傳達，學得新知，據以產生意念，從原本接受式學習轉變成自主性的發現式學習。因此，創業的學習模式，對於學習者的創新思維，影響深遠。本研究，運用行動研究法，研究筆者經歷本校工業設計系設計實作、場域實習課程，執行商品化開發的自主學習歷程，以「概念創造路徑」作為檢測工具，分析創業學習模式對工業設計學生創新思維的影響，並提出教學設計反思及建議，作為創業教育實施的參考。

關鍵詞：創業教育、設計創業、創新思維、自主學習、工業設計
Research on the influence of entrepreneurial learning mode on creative thinking

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Abstract

Recently, the entrepreneurship education has received high attention, and the Government has promoted entrepreneurial activities and related education at universities. In the design industry, more and more Designer graduates were absorbed into the fields of entrepreneurship, such as doing autonomous research, developing design products, and establishing their own brands, etc. Design education has a new trend to introduce entrepreneurial action on designing educational and teaching sites, which is in order to reorganize the external entrepreneurial information, including the thinking of new concepts and the decision-making of new programs through the internal groundbreaking activities, in order to cultivate original ability and realize the industrial value of innovative and entrepreneurial design talent. To achieve this goal, one of the critical elements lies in the shift of learners’ learning patterns; that is, in the process of entrepreneurship and creative practice, through the learning and communication of concepts, to learn new ideas, from the original acceptance of learning could be turned into autonomous discovery learning. Therefore, the learning mode of entrepreneurship has a profound influence on the creative thinking of learners. This study using the action research method, studies the author's experience in the design of the department of industrial design practice, field internship courses, the implementation of commercialized development of the autonomous learning process, using "Concept creation path" as a detection tool, this action analyzes the influence of entrepreneurial learning mode on the creative thinking of industrial design students, and puts forward the reflection and suggestion of teaching design as a reference for the implementation of entrepreneurship education.

Key words: Entrepreneurship Education, Design Entrepreneurship, Creative Thinking, Autonomous Learning, Industrial Design
食在有安全課程學習成效分析

通識課程「食在有安全」之教學目標，除了教授食品安全相關科學知識外，亦期望能培養學生的科學素養。然而，修課學生大多未曾修習食品相關課程，大幅增加了教授本課程之挑戰性。本研究因此擬以評量測試為工具，進行課程學習成效之分析。

本課程概為三部分，第一部分簡介食物分類、每日飲食指南以及國民飲食指標。第二部分簡介食物中毒的種類、食品安全事件以及飲食與健康。第三部分課堂討論，議題包括：自煮飲食需注意的事項、外食飲食需關心的事項、生技食品發展的狀況。本課程實際修課統計學生為 44 人(設計學院 18 人、工程學院 9 人、管理學院 9 人、人文與科學學院 8 人)。有鑑於修課學生專業背景相差懸殊，故於學期第一週進行期初評量測試，以了解學生程度並做為調整課程之依據，另於期末以相同題目再次進行期末評量測試，以評估學生學習的成效。

評量測試題目分為了解程度及了解内容兩部分，第一部分(了解程度)針對食物分類、食品標示、每日飲食指南、國民飲食指標及基因改造食品五個議題；選擇項目分成四等級：從沒聽過為 0%、有聽過但不清楚為 25%、有一點基礎概念為 50% 以及高於基礎概念為 75%。

第二部分(了解內容)依課程內容設計 15 個問題，對問題沒有概念者可直接勾選「不知道」，稍有概念者則可自三個答案選項中選擇作答。

依據期初評量第一部分(了解程度)結果顯示，國民飲食指標議題近半數同學從沒聽過，對於食品標示、基因改造食品及每日飲食指南等議題有近半數之了解程度為 25%；對於食物分類有近九成之了解程度為 50%；經調整課程內容後，並於期末以相同題目進行評量測試，逾半數者對五個議題之了解程度皆高於 50%。
第二部分(了解內容)的 15 題期初評量全班平均題數，回答”不知道”共有 4.5±2.5 題，
答對者 6.8±2.1 題，僅4人答對 10 題以上；期末評量回答”不知道”者僅 1.0±1.1 題，答對者
達 9.8±2.0 題，有 27 人(佔 61.4%)答對超過 10 題。從期初及期末評量測試結果之明顯差異
可知，修課學生的學習成效正向積極。

關鍵詞：食在有安全、評量測試、成效分析
Analysis on the learning effect on Food and Safety

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Abstract

In addition to teaching food safety-related scientific knowledge, the objective of the particular general education course is to teach students the scientific literacy of students. However, since most of the students have never taken food-related courses before, the challenge of teaching this course has been greatly increased. This study therefore intends to use the assessment test to analyze the effectiveness of the learning on Food and Safety course in National Yunlin University of Science and Technology, NYUST.

This course is divided into three parts. The first part introduces the classification of food, daily dietary guidelines, and national dietary indicators. The second part introduces the types of food poisoning, food safety incidents, and the correlation between diet and health. The third part of the course discusses topics including matters needing attention during self-cooking diet, matters needing attention in eating out, and development of genetically modified food.

With the original total of 50 students, 44 actually participated in the course evaluation (18 from the college of design; 9 from the college of engineering; 9 from the college of management; 8 from the college of humanities and applied sciences). The initial evaluation is conducted in the first week of the semester to understand the general level of the students, and it serves as the basis for adjusting the course’s contents. At the end of the semester, the identical questions will be used again to assess the effectiveness of their learning.

The assessment questions are divided into two parts: the degree that is understood and the content that is understood. The first part (the degree understood) is divided into four categories: food classification, food labeling, daily dietary guidelines, national dietary indicators and genetically modified foods. Four levels are defined as “never heard” — 0%, “have heard but not clear” — 25%, “have a basic concept” — 50%, and “above the basic concept” — 75%. In the second part (the content understood), 15 questions are designed according to the content of the course. If there is no idea to the question, "Do not know" should be selected. For those with a little concept should choose the best answer from the other three options.

Regarding the result of the initial evaluation (the first part), nearly half of the national dietary indicators had not been heard. Nearly half of the topics on food labeling, genetically modified foods and daily dietary guidelines had been understood with the degree of 25% (have heard but not clear); nearly 60% of the students had had the understanding on food classification with the degree of 50% (have a basic concept). The course content was adjusted and identical questions have been tested at the end of semester. Consequently, over half of the respondents know more about the five topics with the degree of 50%. As for the 15 questions of the initial evaluation (the second part), the averaged question of the class, 4.5±2.5 questions were answered "do not know", students answered 6.8±2.1 questions correctly in average, only four people got more than 10 questions right.
Regarding the final evaluation of the average number of questions, only 1.0±1.1 question was answered “do not know”, 9.8±2.0 questions were answered correctly, and 27 people (accounting for 61.4%) answered more than 10 questions correctly. Based on the obvious differences between the initial and final test results, the learning outcomes of the students are positive and active.

**Keywords:** Food safety, Assessment test, Effectiveness analysis
民間糕餅模雕刻藝術與傳統節慶之研究—

以傳統糕餅美食為例

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摘要

糕模雕刻文化承襲漢族移民與在地民俗風情及傳統生活的時間超過百年歲月，過去以古老的雕刻模印技術與簡易的雕刻器具憑著智慧與創意使糕餅在台灣開枝散葉。而在民間製作各式糕餅糕模雕刻，大多數都是利用木模雕刻出來的，民間繼承祖父輩雕刻糕印的工藝，刻意雕鏤，不僅形成了一種常民生活文化現象糕餅文化，也開拓了民間糕餅的飲食文化，而且世代傳承，催生了傳統的糕模雕刻藝術。

糕餅食品文化是飲食文化軌跡裡不可或缺的一條鎖鏈，所以糕餅在人們生活中承載了濃厚的文化象徵意義及感情生活的傳達，有著緊密息息關聯。以歷史資料得知，並了解糕模藝術文化及節慶活動的歷史社會情境以及風俗脈絡，所以糕模最精緻的一面是應用於各種歲時慶典、祝壽、祭典以及節氣運轉或輪替之春節、端午節、元宵節、天公生、元宵節、中秋節、冬至等活動中扮演不可或缺的重要角色。同時也展現糕模工藝藝術與飲食生活合而為一的，所以兩者的關係非常密切及息息關聯的。

本研究以文獻調查法及次級資料分析法，研究結果證實:傳統糕模藝術文化與傳統節慶所蕴含的歷史深度，可以了解社會變遷的過程，演化演進的過程是值得深入教育及研究及探討:

關鍵字:糕模、糕餅、傳統節慶。
Research on folk cake mold carving art and traditional festivals - Take traditional pastry cuisine as an example

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Abstract

The cake carving culture inherits the Han immigrants and the local folk customs and the festivals for more than a hundred years. In the past, the ancient carving techniques and simple carving tools used wisdom and creativity to make the cakes spread in Taiwan. In the folk making all kinds of cakes and cakes, most of them are carved out with wooden molds. The folks inherit the crafts of the grandfathers' carvings and cakes, and they are deliberately carved. They not only form a cake culture of the people's life and culture, but also open up the culture. The food culture of folk cakes, and passed down from generation to generation, gave birth to the traditional art of cake carving.

Pastry food culture is an indispensable chain in the diet culture, so cakes carry a strong cultural symbolic meaning and emotional life in people's lives, and they are closely related. According to historical data, and to understand the historical social situation and customs of the cake art culture and festival activities, the most exquisite side of the cake model is the Spring Festival, which is used for various birthday celebrations, birthdays, ceremonies, and solar terms or rotations. The Dragon Boat Festival, the Lantern Festival, the Tiangongsheng, the Lantern Festival, the Mid-Autumn Festival, the Winter Solstice and other activities play an indispensable role. At the same time, it also shows that the art of cake technology and food life are one, so the relationship between the two is very close and closely related.

Based on the literature survey method and the secondary data analysis method, the research results confirm that the historical depth of traditional cake art culture and traditional festivals can understand the process of social change, and the process of evolution and evolution is worthy of in-depth education and research and discussion.

Keywords: cake molds, cakes, traditional festivals.
探討實體與虛擬媒介對設計團隊合作之影響—
以使用者旅程圖為例

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摘要

團隊合作與討論在進行設計時經常是一個不可或缺的環節，而團隊設計有各式各樣的設計媒介可以使用，但卻很少有研究著手於不同設計媒介對於團隊合作的影響力。在過去普遍以實體的紙張作為設計媒介，近年來由於科技與網路的日益普及，線上虛擬化的學習方式越來越受到重視，且線上共編更是在設計領域之中逐漸成為一項趨勢。有鑑於此，本文描述了一項比較性研究，旨在探討實體設計媒介與虛擬設計媒介對於學生們在進行團隊設計時之影響力差異，以作為未來進行設計相關課程教學時，為學生選擇合適的設計媒介之依據。本研究與國立成功大學的設計課程相結合，選擇近年來越來越受到重視的使用者旅程圖作為本實驗中所使用的設計方法，由來自國立成功大學工業設計學系的學生，分為四個團隊進行使用者旅程圖設計，每個團隊的成員之間共同討論與發想，並以視覺化的方式將客戶體驗分階段性地呈現出來。其中兩個團隊以實體紙張作為設計媒介，並且提供了他們鉛筆、麥克筆、便條紙、橡皮擦作為工具；另外兩個團隊以線上共編平台作為虛擬設計媒介，透過個人筆記型電腦以共編的方式進行設計。過程中全程錄影紀錄，進行後續的分析。接著在下一個階段，與使用者旅程圖的專家進行半結構式訪談，訂立評測標準，以揭示不同的設計媒介如何影響學生們的感受、行為與團隊設計表現。結果發現，使用線上共編板作為虛擬設計媒介的學生們認為筆記型電腦的螢幕尺寸不能完整地呈現整個畫面，且操作上不如實體紙張來得直覺，但有助於迅速瀏覽每個人的操作與想法，而使用實體紙張作為設計媒介的學生之間的互動較頻繁，使用線上共編版的團隊則在使用者旅程圖的設計上更豐富且多元，並呈現了更多的細節。

關鍵詞：設計媒介、虛擬/實體媒介、線上共編、使用者旅程圖
Impact of Physical and Virtual Mediums on Design Teamwork - User Journey Map

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Abstract

It is indispensable to have teamwork and discussion in the process of design. There are a variety of design mediums available for design teamwork, but few studies work on how different design mediums influence the teamwork. In the past, physical papers were widely used as a design medium. In recent years, due to the increasing popularity of technology and the Internet, online virtual learning has become more and more important. Moreover, online collaborate platform has gradually become a trend in the field of design. Therefore, this paper describes a comparative study, which explores the differences of influence on physical medium and virtual medium for students in design teamwork to be as a basis for selecting the most suitable design medium for students in the design courses or workshops. This study combines with the design curriculum of the National Cheng Kung University and selects user journey map that has received more and more attention in recent years as a design method used in this experiment. This study was participated by students from the Department of Industrial Design of National Cheng Kung University. Students were divided into four groups to design a user journey map. Team members discussed and inspired ideas with each other, and finally presented the customer experience step by step in a visual way.

Two of the teams used white papers as the physical medium and were provided pencils, markers, sticky notes and erasers as design tools; the other two teams used the online board as a virtual medium on laptops to collaborate the design teamwork with each other. The design process was recorded for the follow-up analysis. In the next stage, researchers conducted the semi-structured interviews with experts on the user journey map, and established the evaluation criteria to reveal how different design mediums affect the students' feelings, behaviors, and design performance. The results indicate that students who used online cooperate board as a virtual design medium regarded that the screen size of laptop could not fully present the entire user journey map, and it was not as intuitive to use as physical paper but helpful to read everyone’s operations and ideas quickly. In addition, students who used the physical paper as design medium had more interaction with each other; students who used the online collaborate board presented more ideas and details on the design work performance.

Key words: Design medium, Physical/Virtual medium, Online collaborate, User journey map
論文發表摘要
– A1 大學結構調整與課程創新

海報論文摘要
「※」為教育部教學實踐研究計畫成果發表。
<table>
<thead>
<tr>
<th>論文題目</th>
<th>作者</th>
</tr>
</thead>
</table>
| 建築文化資產的實務性自我學習                                         | 徐慧民
國立雲林科技大學文化資產維護學系                                   |
| 以敘事力評量情意教育的工程倫理課程行動研究                          | 許藝菊
南臺科技大學機械工程學系
駱盛源
南臺科技大學通識教育中心                                           |
| 應用道德實踐的工程倫理課程行動研究                                   | 許藝菊
南臺科技大學機械工程學系
高啟源
南臺科技大學機械工程學系                                           |
| ※運算思維教學之行動研究-以圖控機器人為例                          | 陳宛瑜
國立臺中教育大學
李松濤
國立臺中教育大學                                                   |
| ※學習價值模型與應用                                                  | 翁美玲
國立勤益科技大學工業工程與管理系                                 |
| 設計課程跨領域之創新教學                                             | 陸蕙萍
亞洲大學 視覺傳達設計學系                                           |
| ※是諮商？還是去諮商？：就業諮商與輔導課程之定位探索                | 朱柔若
國立中正大學勞工關係學系教授                                       |
| ※打造時光機的鑰匙——「歷史與文化」課程的精進與活化                | 唐屹軒
國立勤益科技大學基礎通識教育中心                                 |
| ※以設計表現技法課程探討自主性學習成效                              | 胡祖武
朝陽科技大學工業設計系
朱信泰
朝陽科技大學工業設計系                                               |
| ※作品集設計課程規劃對學生自主性表現之研究                          | 胡祖武
朝陽科技大學工業設計系
朱谷熹
朝陽科技大學工業設計系                                               |
| ※探討應用翻轉教學 SPOCs 的模式與合作學習策略於統計學之學習成效    | 郭昱賢
逢甲大學合作經濟暨社會事業經營學系
陳羿薰
逢甲大學合作經濟暨社會事業經營學系
彭舒唯
逢甲大學合作經濟暨社會事業經營學系                               |
| 資訊融入邵族藥用植物主題探究課程之行動研究                          | 陳奕帆
國立中正大學教育學系/博士生
吳韻儀                                                                         |
<table>
<thead>
<tr>
<th>論文題目</th>
<th>作者</th>
</tr>
</thead>
<tbody>
<tr>
<td>校園閒置空間與場域活化之研究—以一所偏鄉小學為例</td>
<td>國立嘉義大學教育學系博士生吴韻儀  國立嘉義大學教育學系博士生洪榮正  嘉義縣布袋鎮新塭國民小學/校長</td>
</tr>
<tr>
<td>※運用實作教學創造一門受歡迎的課程</td>
<td>鄭孟玉 大葉大學財務金融學系 丁若儀 國立高雄科技大學海洋事務研究中心</td>
</tr>
<tr>
<td>※專題製作課程結合鷹架理論與翻轉教學模式</td>
<td>徐琍沂 國立臺中科技大學應用英語系</td>
</tr>
<tr>
<td>※於科技輔助情境中進行英語口語表達教學及其效用</td>
<td>李右芷 國立臺中科技大學應用英語系</td>
</tr>
<tr>
<td>※在大學英語寫作課堂中運用自動寫作評量系統</td>
<td>郭書萍 國立嘉義大學外語系 陳濤亘 國立嘉義大學外語系</td>
</tr>
<tr>
<td>融入美感教育對校園建築美學影響之研究--以技術型高中專業課程為例</td>
<td>盧正川 國立高雄師範大學工業科技教育學系博士生 朱耀明 國立高雄師範大學工業教育學系教授</td>
</tr>
<tr>
<td>※應用個案教學法探索與反思性別教育之意涵</td>
<td>林曉芳 明道大學課程與教學研究所</td>
</tr>
<tr>
<td>※融入藝術及社會關懷的遊憩治療課程設計與實踐</td>
<td>王文英 國立虎尾科技大學休閒遊憩系副教授</td>
</tr>
<tr>
<td>數位遠距課程與傳統課室教學成效之比較－以「文學與人生」數位課程為例摘要</td>
<td>王幸華 中臺科技大學 通識教育中心副教授</td>
</tr>
<tr>
<td>※STEM 融入大學統計教學的學習成效探討</td>
<td>林原宏 國立臺中教育大學 數學教育學系</td>
</tr>
<tr>
<td>※設計思考於資訊管理實務專題教學個案</td>
<td>連俊瑋 國立臺中科技大學資訊管理系</td>
</tr>
<tr>
<td>※自編英文單字 App 對大學生自主學習之學習動機與學習成效探討</td>
<td>王柏婷 逢甲大學外語教學中心</td>
</tr>
<tr>
<td>※青出於藍—染織工藝人才培育教學策略探討</td>
<td>王瀚羚 國立雲林科技大學文化資產維護系</td>
</tr>
<tr>
<td>※運用問題導向學習於行銷專業課程之研究</td>
<td>潘立芸 國立雲林科技大學企業管理學系</td>
</tr>
</tbody>
</table>
建築文化資產的實務性自我學習

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摘要

今日台灣的文化遺產再利用面臨重要轉型期，建築文化資產反映著地方鄰里的常民生
活，建築文化資產的保存實務工作能夠帶動學生參與熱情，相關地方風土教育亦能藉之發
揚。本計畫先透過課堂相關理念的講授以及臨摹學習，爾後則藉由修復工程執行中的實證
研究地點：苗栗縣定古蹟蔡氏濟陽堂的工作坊，或是其他文化資產現場，進行實務性自我
學習，降低理論與實務的差距，計畫目的整理如下三點：1. 落實建築文化資產的道地文化
思維；2. 自我學習導入於文化資產工作之實質內容；3. 建築文化資產修復與再利用工作坊
的實務性機制。

這些過程主要的價值與課程的成果呈現於：1. 訓練學生圖學繪製與模型製作等的基本
技巧，做為未來從事實質修復工作的基礎；2. 幫助學生閱讀並理解有形文化資產修復工作
執行時，相關工程書圖、工程預算、施工說明書、施工紀錄…等；3. 建築文化資產修復的
現場參與。

關鍵詞：建築文化資產、臨摹學習、自我學習、苗栗縣定古蹟蔡氏濟陽堂
Practical Self-study on Built Heritage

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Abstract

This plan aims to elucidate the current situation of the built heritage in Taiwan. Built heritage reflects the lives of people that live in a community, and the practical building work of historical architecture invariably aspires the students with passion to participate, spreading also the local grassroots awareness education. For reduce the gap between theory and practice. The locales of the publication’s field verification study focuses mainly on Miaoli County Monument, the Tsai's Mansion, during the repair project execution, and other construction sites or historic buildings. The main purpose of this plan are as follows: 1. The cultural thinking for realizing the genuine significance of historical architecture; 2. The self-study content of the historical architecture conservation work; 3. The practical mechanism in built heritage’s repair, restoration and reuse work.

The main value of these course and the results of the course are presented in：1. Basic skills in drawing and modeling. 2. Understanding the design diagram, the budget, construction instructions etc. of a built heritage projects. 3. On-site participation with architect, craftsman and workers.

Key words: Built heritage、Imitating Learning 、Self-study、Miaoli County Monument, the Tsai's Mansion
以敘事力評量情意教育的工程倫理課程行動研究

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摘要

研究背景: 高等教育的評量一般分為認知(cognitive)、情意(affective)和技能(psycomotor)等三個面向。工程倫理教育應包括認知與情意兩者。然而一般的課堂適合智育(認知與技能)培養，但是德育(情意)學習則屬不易，因此有些大學教授只好轉向智育的方式來處理德育的學習，以道德理論、知識說明做為課程教授的主軸。然而單純認知導向而淪為教條式的倫理教育，是無法達到改變人心的目標，而這將違反社會大眾對此課程與高等教育人才的期待。除此之外，情意教育的成效很難從外在去評估，它是屬於主觀的內在現象，除了自己，沒有人看得到。因此無法以傳統的筆試、操作、報告等方式，很客觀地評量課堂成效。因為外在是可以「虛情假意」地欺矇他人、很容易假裝。

研究目的: 在此一對大學生實施情意教育的倫理課程中，本文將藉由團體合作、互動、共同達成目標，以學生自評、互評、教師評等三個面向，來紀錄學生在道德倫理意識與敘事力(包括熱情、團隊分工、溝通等指標)在課堂進行中的改變，完成將敘事力訓練為目標，以情意教育為評量基準的工程倫理課程行動研究。

研究方法: 採用「行動研究」以質性研究為主與量性研究輔助，運用筆者所任教的大學課程，南臺機械系 107-1 學年度車輛三乙的必修課程「工程‧倫理與社會」，以多元敘事作為媒介，評量大學生在情意面向上的改變。在 18 週課程安排上有三個階段: (一)、道德倫理的先備知識。首先，打破道德框架，破除倫理迷思，其次，提供兩套道德倫理規範的認知架構，kohlbert 道德三階段與規範倫理學(效益論/義務論)；(二)、敘事力工具之一日體驗。包括四場敘事力工作坊擇一參加，包括: 遊戲力_玩轉學校世界高峰會、多元敘事_青年直播主、T 型跨領域人才、說故事的力量；(三)、科技與社會之風險管理_能源與台灣社會。從先備知識台灣能源，相關的風險、利弊與現況：其次，定義問題並提出解決方案；之後，小組實踐，並在期末提出始末與心得，目標是 21 日科技公民道德實踐行動。

課程成果評量指標有道德倫理意識(包括道德發展三階段、效益論/義務論)、敘事力(包括熱情、團隊分工、溝通)。工具有量表(前後兩次的自我態度量表、團隊學習問卷、前後測的道德發展三段評論、兩次敘事反應調查)、作業(期末報告、一分鐘課後反思、一日工作坊心得等)、訪談、組員互評、觀課紀錄、教學札記等，以三角交叉檢視法(Triangulation)
從收集、分析資料後，將結果呈現出來，從事物的不確定中找出真相。

**重要結論**: 課程成功是每個環節持續推動，累積的成果。由於本課程仍在進行中，本文依照行動研究的歷程將在繳交正文時，回答以下問題:

1. 學生道德倫理意識是否藉由修習本課程而有所提升
2. 本課程設計與實施如何提升學生道德倫理意識
3. 學生敘事力是否藉由修習本課程而有所提升
4. 本課程設計與實施如何提升學生敘事力

**關鍵詞**: 多元敘事力、情意教育、工程倫理、行動研究
Action Research on Engineering Ethics Courses to Evaluate Affective Emotional Education by Narrative Training

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Abstract

Research background: The evaluation of higher education is generally divided into three aspects: cognitive, affective and psychomotor. Engineering ethics education should include both cognitive and affective. However, the general classroom is suitable for intellectual education (cognition and skill) training, but moral education (intentional) learning is not applicable. Therefore, some professors have to turn to intellectual education to deal with moral education, with moral theory and knowledge description as the goal of curriculum teaching. However, the cognitive-oriented and dogmatic ethical education cannot achieve the goal of changing people's behavior to be moral, and this will violate the expectations of the public and the higher education talents. In addition, the effectiveness of affective education is difficult to assess from the outside, it is a subjective internal phenomenon, except for oneself, no one can see. Therefore, it is impossible to evaluate the effectiveness of the classroom objectively in the traditional evaluation methods, like written test, operation, report, etc.

Research purposes: This article will record students' morality by means of group cooperation, interaction, and mutual achievement of goals, with students' self-evaluation, mutual evaluation, and teacher evaluation. Moral/ethical consciousness and narrative power (including enthusiasm, team cooperation, and communication) in the course of the changes in the classroom.

Methods: Using "Action Research" to focus on qualitative research and quantitative research, using the university courses taught by the author, the mandatory course of the third grade in the 107-1 school year of the Department of Mechanical Engineering "Engineering, Ethics and Society." There are three stages in the 18-week curriculum: (1) Knowledge of ethics. First, break
the moral framework and break the ethical myth. Secondly, provide two sets of cognitive frameworks for moral and ethical norms, kohlbert moral three-stage theory and normative ethics (utilitarianism/ Deontology); (2) one day experience of the narrative tools. Including four narrative workshops,: Game Power _ Fun School World Summit, Multiple Narrative _ Youth Live Host, T-type cross-disciplinary talent, storytelling power; (3), technology and social risks Management _ energy and Taiwan society. From the knowledge of Taiwan's energy, related risks, advantages and disadvantages, and the current situation; secondly, define the problem and propose solutions; then, the group will practice, and come out their own experience report.

The curriculum outcome will be measured based on the indicators of moral and ethical awareness (including three stages of moral development, utilitarianism/ Deontology theory), and narrative power (including enthusiasm, team cooperation, communication). The tools have questionnaires (three times the self-attitude scales, team study questionnaire, three stages of ethical development before and after the course, two teaching response survey), homework (end-of-term report, one-minute after-class reflection, one day Workshop experience), interviews, team members' mutual evaluation, class records, teaching notes, etc., using Triangulation to collect and analyze the data, present the results, and find out the truth in the uncertainty of the objects.

**Results:** The success of the course is the result of continuous promotion and accumulation in every aspect. As this course is still in progress, the later formal article will answer the following questions in accordance with the course of action research:

1. Does the student’s ethical awareness improve by taking this course?

2. How do the moral and ethical awareness of the students improve by the design and implementation of this course?

3. Does the student's narrative power improve by taking this course?

4. How does the student's narrative power improve by the design and implementation of this course?

**Key words:** Multi-narration, affective education, engineering ethics, action research
應用道德實踐的「工程倫理與社會」課程行動研究

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摘要

「工程倫理與社會」是工科院校的一門新興學科。這一門看似所有工學院教授都可以任教的科目，實際上有一些工程學教授不相信他們有資格教授該課程。此外，從多次社會工安與金融風暴的事件，讓社會輿論偏向於相信道德不是一門可以教授的科目。本計畫採用行動研究方法，以提高教學影響力，在工程倫理和社會的 18 週課程進行中應用了行動研究的五個步驟來評估道德實施的效果，並且 18 週的課程設計分為以下三個部分：一、1-4 週重建道德觀念；二 5-9 週應用工程倫理案例研究；三、10-18 透過 STS(Science, Technology and Society) 案例的道德實踐發現道德限制，而重新檢視自己的道德意識。此課程設計先墊基於倫理理論和案例研究，之後讓學生們探討科學技術的發展如何影響社會。最後，由學生們自行提出一個為期 21 天的道德實踐來自我評估他們的道德意識發展過程。本計畫蒐集來自學生，合作教師和講師的作業、問卷結果、回饋與教學筆記等記錄，並分析該課程程序所呈現的結果。總體而言，與學期末的前幾個學期成績相比較，本課程的期末問卷調查結果均在正常範圍內；然而，學生未通過比率更高，最終的平均成績低於之前的等級。學生的家庭作業表明他們非常積極參與課堂活動。雖然這 21 天的實施已經證明比他們預期的更麻煩，但他們開始習慣它，並試圖說服他們的朋友和家人也這樣做。而且，也因為實踐的過程讓他們感覺很好，因為他們覺得可以為地球做出一些貢獻。

關鍵詞：工程倫理學，行動研究，勞倫斯科爾伯格的道德發展階段，道德實踐
Applying Action Research to Develop Curriculum for Engineering Ethics Based on Moral Practice

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Engineering ethics is a new subject in engineering college. Some engineering professors do not believe they are qualified to teach the course. In addition, the general idea thinks ethics is not a subject can be taught. This project applied the methodology of action research to enhance the teaching influence. Five steps were applied to the course of engineering ethics and society to evaluate the effect of moral implementation. Based on the lecture of ethical theory and case studies, students explored how the development of science and technology impacts the society. Then, the students proposed a 21-day ethical practice to evaluate their ethical process. The procedure was recorded by students, a cooperative teacher, and lecturer’s teaching notes. Overall, compare with the previous semesters in the end of the semesters, the questionnaire results of this course are within the normal range; however, the failing rate is higher and the final grade average is lower than the previous classes. The student homework demonstrate that they are quite engaged into the class activities. Even though, the 21-day implementation had proven more troublesome than they expected, they began to get used to it and tried to persuade their friends and families to do so too. Moreover, they felt good that they can contribute to the Earth.

Key words: engineering ethics, action research, Lawrence Kohlberg's stages of moral development
幼兒運算思維教學之行動研究-以圖控機器人為例

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摘要

本研究目的在於(一)了解幼兒運算思維教學對幼兒問題解決能力的提升程度，以及(二)幼兒運算思維課程教學策略對教師的專業成長影響。研究過程透過情境與故事、圖卡引導孩子進入運算思維教學的活動課程，實施過程中的初始教學策略設計係以生活科學相關的光與色彩等主題帶入機器人運算思維教學情境，其中與課堂觀課老師共同將教學策略修正為以幼兒常接觸的日常生活情境方式為主。本行動研究期程總共分為兩次循環第一循環五堂課，第二循環十堂課，總共十週課程，每次為 90 分鐘，研究場域於中部某私立幼兒園才藝班當中進行。受試幼兒共有十一位，年齡介於 5~6 歲，研究者分別在第五次與第十次課程中進行幼兒問題解決能力提升程度的相關評量，並與觀課老師利用協同觀課教師評量工具分別在第一循環與第二循環進行評分探究個案教師的專業成長情形。研究結果發現，經過十週課程教學後，共有 3 位幼兒在問題解決能力有明顯提升，後續與帶班老師以及這些個案幼兒的半結構式訪談也發現，這些幼兒生活經驗較為豐富，存在有利學習的相關因素，此外，在十週的資料收集與分析中，研究者也發現運用故事情境與設計機器人圖控闖關遊戲的方式能夠有效激發幼兒主動學習之興趣。
An Action Research on Teaching Kids Computational Thinking - Taking Graphic Controlled Robots as an Example

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Abstract
The purpose of this study is to understand (1) how much the teaching of kids’ computational thinking can improve their problem-solving ability, and (2) the influence of teaching strategy of kids’ computational thinking on teachers' professional growth. The research process introduces kids into the activity curriculum of computational thinking through situations, stories, and picture cards. The initial teaching strategy design is to bring the theme of light and color related to life science into the teaching situation of robotic computational thinking. The teaching strategy is revised by the researcher together with the Observation Teachers to imitate the kids’ daily life situation. This action research schedule includes two cycles: the first cycle contains 5 lessons, and the second cycle contains 10 lessons. 90 minutes each time, 10 weeks for the whole period. The research is implemented in a private kindergarten talent class in central Taiwan. 11 kids aged between 5 and 6 are tested. In the 5th and 10th lesson, the researcher assesses the improvement degree of the kids' problem-solving ability. And the professional growth of the teachers is explored through the evaluation scores in the 1st and 2nd cycle with the help of the assessment tool of the Collaborative Observation Teachers. The results show that after 10 weeks teaching, 3 kids significantly improve their problem-solving ability. The follow-up semi-structured interviews with the teachers and the tested kids also show that these kids have rich life experiences and relevant factors beneficial to learning. In addition, in the data collection and analysis during the 10 weeks, the researcher also finds that using story situations and designing tournaments for graphic controlled robots can effectively stimulate kids’ interest in active learning.

Keywords: computational thinking, early childhood education, action research
學習價值模型與應用

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摘要

價值觀的建立對於學習態度乃至於學習成效皆有顯著影響，正確的價值觀是養成良好學習態度與改善學習綜效的關鍵。本研究提出「學習價值模型」理論，旨在幫助教師設計與規劃課程，並協助學生建構一套有效的自主學習機制。首先，藉由開放的溝通協助學習者了解自我價值、建立對於「學習」正確的認知和觀念，並透過課程設計的共同參與和授課方式的彈性調整，進一步強化學習者的學習動機；接著經由提供整合性資源與系統化的「做中學」演練機會，讓學習者親身投入完整的學習歷程，並在過程中經由不斷的反思和修正，建立適合學習者自己的學習模式。學習價值模型是以培養學習者自主學習的能力為目標，藉由一系列悉心設計的活動以及「授」與「受」雙方的共同參與，促成一同經歷衝擊、磨合、融入的合作過程，最後達到教學相長的學習成效。本研究的貢獻自 2008 年起，透過教育部和勞動部等政府單位的補助計畫陸續呈現：(1) 成功透過學習價值模型培育數千位傑出的學習者；(2) 輔助學習者取得千餘張國際專業證照；(3) 學習者參與全國競賽並取得優異成績；(4) 協助學習者實習並順利就業。學習價值模型的系統化課程設計架構，可以協助各級教師提升課程規劃的完善度，並經由授與受雙方隨時檢視和調整授課模式極大化學習綜效。

關鍵字：價值觀、動機、自主學習機制、學習綜效、學習價值模型
Learning Value Model

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Abstract

Core value has significant impact on one’s learning attitude and further influences his/her learning efficiency. Having right core value is the key to form the appropriate learning attitude and in turn improve the learning synergy. In this research, the Learning Value Model (LVM) is proposed to help teachers design course development and learners to build their self-learning mechanism with effectiveness. First, open discussion is carried out and through the whole classes to ensure the learners better understand their core values and the true meaning of “learning”, while learners also take part in the course co-design and in-time adjustment to strengthen their motives. Second, integrated resources and systemized “learning by doing” practices are provided to involve the learners into a comprehensive learning experience. Last, during the learning process individual self-reflections and adjustments are essential in constructing the learners a customized learning mechanism. Experiencing the progress of collision, conflict, and bilateral reconciliation, both of the teachers and learners receive the best effect from the experience of co-learning. The contributions of this research are shown as the successful outcomes of various projects supported by governmental departments such as Ministry of Education and Ministry of Labor, etc. since 2008: (1) the LVM has been successfully training thousands of learners; (2) with courses accomplishment, thousands of international professional certificates have been issued to our learners; (3) outstanding performance in the national contests of our learners; (4) helping learners gain summer internships and employment after graduation. The systematic course structure of the Learning Value Model assists teachers in curriculum planning; and the co-learning nature of the training system enables the teachers and learners in reviewing and adjusting collaboratively to maximize the learning synergy.

Key words: core values, motives, self-learning mechanism, learning synergy, learning value
設計課程跨領域之創新教學

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摘要

跨領域學習已成為全球教育的趨勢，如何讓學生在校就有機會跨領域學習，進而透過實作將創意轉變成具有產值的商品，一直是大學設計科系努力的目標。因應以上趨勢，本課程嘗試採跨領域教學模式，整合三個系所及課程，透過跨年級及跨科系的分組互動方式，共同完成校園紀念商品之開發，並以專案導向學習活動、專家指導、公開發表及同儕互評等多元學習模式來執行課程，試圖為學生樹立專業目標與提昇學習動機。課程的目標對象為大學部視覺傳達設計學系與創意商品設計學系之大一新生及不分系國際設計學士班大三學生。整合的課程包括大一之基本設計（一）及大三之國際設計實務；授課內容包括：建築之空間語彙、設計方法介紹、陶瓷商品製作技術等；教學方式包括：口頭講授、操作示範、小組討論、設計任務執行、公開發表等。整體而言，學生產出的作品多元且有創意，分析結果也與預期目標相符合。根據往年執行此課程所做的前測結果及作品可以判斷，此教學模式的建立將有助於提昇學生學習動機，使學生理解如何將概念落實為商品，並勇於接受未來設計課程之挑戰，亦能做為未來設計人才培育模式之參考。

關鍵字：跨領域、創新教學
Innovative teaching of cross-disciplinary design courses

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Abstract

Interdisciplinary learning has become a global education trend. Therefore, design departments in colleges and universities have endeavored to provide students with opportunity to conduct such learning, helping students to convert their creativity to profitable products through practice. In response to this global trend, this study designed a course with an interdisciplinary teaching approach. By combining the course content and teaching materials from three departments, the proposed course assigned students of different grades and departments into groups to develop school souvenir products. Moreover, diverse learning approaches, such as project-oriented learning activities, expert guidance, public product releases, and peer reviews, were conducted in the proposed course, thereby helping students establish professional goals and increase their learning motivations. The target participants of the proposed course was freshman students in the undergraduate programs of a visual communication design department and creative product design department and junior students in the undergraduate program of an international design department. The courses integrated into the proposed course included the freshman course Basic Design (1) and the junior course International Design Practice. The course content included terminology related to architectural space, introduction to design methods, and techniques for creating ceramic products. The methods of teaching included oral lectures, demonstrations, group discussion, design assignments, and public releases. Overall, the products designed by the students were diverse and creative. The analysis results also revealed that students’ learning outcomes met the expected outcomes. Pretest results and design works acquired prior to implementing the proposed course each year indicated that the adopted teaching approach is conducive to improving student learning motivation, helping students understand how to convert concepts to products, and encouraging students to confront challenges in subsequent design courses. The teaching approach can also serve as a reference for developing future design talent.

Key words: cross-disciplinary, innovative teaching
是諮商？還是去諮商？：就業諮商與輔導課程之定位探索

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摘要

就一門開設在勞工關係學系的專業選修課程來說，〈就業諮商與輔導〉課程究竟應
該如何設計，才能協助修課同學在完全沒有諮商導論等相關的先備知識的情況下，順利地達
成專業要求，且能習得符合就業市場需求的專業知識呢？這項提問指出了一點非本課程
能夠改善、只能順應的結構性障礙，那就是〈就業諮商與輔導〉課程在勞工關係整體
課程規劃上，屬於單項孤立課程的這項事實。在缺乏有機組合的群組課程規劃下，本教
學實踐計畫從職場與學院的連結這個角度切入，嘗試解答本課程設計最基本的問題
意識──勞工關係學系的專業選修課程

（就業諮商與輔導）究竟應該涵蓋哪些教學內容、活動，以及學習成果評量項目，特別是諮商
專業知識的比重，方能在經過一學期18週的學習過程之後，適切地裝備修課同學具有相
對應的，符合就業市場需求的專業知識與能力。首先確認〈就業諮商與輔導〉這項
專業知能最直接、最普遍的職場──就業服務產業，然後鎖定產業內的就業服務相關人
員，觀察就業諮商輔導專業知識與技能其在招募時所採用的選才條件與錄用後實際執行業務時
所佔比例而得出的結果，對課程進行重新規劃。根據研究發現，本課程設計聚焦於三大體驗學
習──親自探索校園內外的就業機會及其勞動條件、就服人員的工作內容與實務經驗、職場歧
視辨識與角色模擬。正因為體驗學習為課程核心，本課程放棄前測與後測式的知識檢定，而
以事實發現的作品與概念應用等展演，作為學習成果評量的依據。

關鍵字：就業諮商輔導、就業服務人員、體驗學習、事實發現、角色模擬
Counseling or De-Counseling? The Re-orientation of the Employment Counseling and Guidance Curriculum

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Abstract

What should it look like – the Employment Counseling and Guidance Curriculum as an optional subject for the students enrolled at the Department of Labor Relations? In the duration of 18 weeks of teaching, apart from the first week of introduction and the two weeks for mid- and final-exams, what the topics for the remaining 15 weeks should be taught? Especially for the students majored at Labor Relations, no professional lessons related to Counseling or Guidance have been offered on the general list of mains or optional subjects. In this Case, what kind of curriculum can help the students registered at this optional subject class acquire the professional knowledge and skills and hereafter increase their employability? In search of the relevant answers, this research project aims to conduct participatory observations of the labor process of the employment service workers and also undertake detailed interviews with them of their daily job experiences. It expects that the research findings will help students of Labor Relations Majors enrolled at the class of Employment Counseling and Guidance overcome the anxiety of having no counseling knowledge backgrounds as a learning obstacle. For this purpose, three kinds of experiential learning are arranged: a survey of the part-time jobs on-and-off campus, a study trip to public employment service centre and a role-playing workshop to stop discriminatory workplace practices. In the public employment service centre, students are expected to meet, work and interview their seniors who are now working as employment service workers in order for them to discover themselves how employment services are delivered to job seekers and how their seniors practice counseling and guidance skills in the process of service delivery. For this reason, the pre-test and post-test techniques are not considered as an appropriate tool for learning assessment, but accomplishments in fact discovery and role-play are taken for learning assessment.

Keywords: Employment Counseling and Guidance, Employment Services Workers, Experiential Learning, Fact Discovery, Role Play
打造時光機的鑰匙——「歷史與文化」課程的精進與活化

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摘要

本教學實踐研究計畫旨在藉由筆者於國立勤益科技大學基礎通識教育中心開設的「歷史與文化」下學期中國近現代史課程內容的精進與活化，解決教學現場發現的三大問題：學生對於歷史課程缺乏學習興趣與主動學習的動力；學生普遍缺乏文字寫作與口語報告訓練；學生缺乏自主判斷、獨立、批判性思考的思辨能力訓練等問題。緣此，本計畫加入日本佐藤學教授「學習共同體」之概念，引導學生成為課堂學習的主角，減少過多教師單向講授形式，改採雙向、多元互動模式，引導／強迫學生動腦思考問題，而非坐在台下接收訊息而已。同時，協助學生透過「做中學」、分組討論、議題辯論等形式，共同探索歷史知識。此外，亦嘗試融入跨域教學，邀請來自不同領域的專家學者激發學生的學習興趣，保持對課程的期待感與新鮮感，協助學生從不一樣的視角，回觀歷史發展的重要大事。進而輔以真實的影音圖像，幫助學生快速進入歷史現場。同時，也將特別選取不同視角的影音圖像，讓學生可以深入探究歷史觀點的歧異，挑戰過去習以為常的歷史刻板印象。是故，在多元教學的課程設計下，透過每週學習問卷調查與課程助理的觀察，明顯增進學生的學習動力，並提升學生參與課堂討論的意願。同時，以分組方式進行課堂活動、作業討論，也讓學生多了與同儕互動、腦力激盪的機會。

關鍵詞：歷史教學、學習共同體、人文精神、獨立思考
Creating the Keys of Time Machine: Enriched and Activation Curriculum of “History and Culture”

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Abstract

This MOE Teaching Practice Research Program aims to improve and revitalize the contents of the course of modern Chinese history under the theme of “History and Culture” set by the author at the General Education Center of National Chiu-Yi University of Technology. The solution is to solve the problem that students lack of learning for history courses interest and active learning motivation; students generally lack of writing and oral report training; lack of independent judgments of students, independent thinking, critical thinking training ability and other issues. The project will join the concept of “Learning Community” by Professor Manabu Sato of Japan to guide students to become the protagonists of classroom learning, reduce the one-way lecture mode of too many teachers, switch to two-way and multiple interactive modes, guide / force students to think in the brain, Instead of sitting under the stage to receive messages, we help students explore history knowledge through “learning by doing,” group discussions, and topic debates. In addition, we also try to integrate cross-disciplinary teaching, invite experts and scholars from different fields to stimulate students’ interest in learning, maintain a sense of expectation and freshness of the curriculum, and assist students to look at the important events of historical development from different perspectives. It is supplemented with real audio and video images to help students enter the historical scene more quickly. At the same time, we will also select audio and video images from different perspectives, so that students can deeply explore the differences in historical perspectives and challenge the historical stereotypes that have been used in the past. Therefore, under the curriculum design of multi-disciplinary teaching, through the weekly study questionnaire and the observation of the course assistant, the students’ learning motivation is obviously enhanced and the students’ willingness to participate in the class discussion is enhanced. At the same time, classroom activities and homework discussions in groups also give students more opportunities to interact with their peers and brainstorm.

Keywords: History teaching, Learning community, Human spirit, Independent thinking
以設計表現技法課程探討自主性學習成效

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摘要

本研究主要透過設計表現技法課程推動學生自主性的學習態度。主要研究目的期望學生能提升心理態度、設計表現、自主性學習意願等因素，獲得身心健全的學習發展。所以在研究方法上主要以個別教師行動研究，進行室課管理、教學策略、教材創新設計等規劃，探討學生認知與學習成效，並經由課程結束後進行個別訪談以獲得學生在自主性學習上的成效因子。研究結果發現，學生會在課程進行中，隨著教師的引導與互動，逐漸覺醒自種性學習行為，並在學習上有突破性的成長；反觀，尚未覺醒者的學生則在學習與互動上表現平平，其原因在於 1.因學習障礙導致缺乏自主性、2.有一定能力但卻夠用導致缺乏自主性、3.因自我感覺良好覺得不需要再給予成長而缺乏自主性。此外，覺醒者學生不管在自主性學習、設計創意、互動學習上皆有正向的成長，並會在課外自主學習其他相關的設計表現技法。本研究經由設計表現技法課程獲得的教學成效，除能提昇學生的自主性學習行為外，並有利於學生日後設計能力培養之茁壯。其研究成果亦可日後提供其他相關設計表現課程之規劃及學術界相關研究之參考。

關鍵詞：設計表現、自主性學習、學習成效
A Study on Effectiveness of Independent Learning by Design Rendering Techniques Course

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Abstract

This study mainly promotes students' self-directed learning attitude through the design rendering techniques courses. The objectives are to expect students to improve their mental and psychological attitudes, design presentation, and willingness to learn independently. Therefore, in the research method, the individual teacher action research mainly carries out the planning of classroom management, teaching strategy and innovative design of teaching materials, and explores the students' cognition and learning effectiveness. After the course, individual interviews are conducted to obtain students' autonomous learning effectiveness factor. The result that students will gradually awaken self-study behaviors and have a breakthrough in learning as they progress and interact with the teachers. In contrast, students who have not yet awakened are learning and interacting mediocre. The reason is that

1. lack of autonomy due to learning disabilities,
2. a certain ability but enough to lead to lack of autonomy,
3. self-complacency, don't need to grow and lack of autonomy.

In addition, awakened students have positive growth in autonomous learning, design creativity, and interactive learning, and will learn other related design techniques independently outside the classroom. In addition to improving students' autonomous learning behaviors, the results obtained through this course are conducive to students' ability to design in the future. The results of the research can also provide reference for other related design rendering techniques courses and related research in the academic field.

Key words: Design Performance, Autonomous Learning, Learning Effectiveness
作品集設計課程規劃對學生自主性表現之研究

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摘要

本研究透過作品集設計課程的規劃與教學，了解學生自主性學習的表現樣貌，並進一步推動學生自主學習能量。研究目標是希望藉此提升學生心理上的自我期許，並在設計表現及自主性學習的意願上，得到有效的學習歷程及能力培養。本研究主要以個別教師的行動研究方式，透過教學引導、喚醒學生自主學習及最後作品分析研究的三個階段規劃，探討學生的學習狀況與實際表現。以階段性作業的個別指導教學、了解學生問題，並鼓勵學生成長等方式，觀察學生的自主性學習覺醒過程。研究結果發現，多數學生能隨著每堂課程進行，透過教師的引導及課間與課後互動，慢慢產生自主性學習的覺醒反應，並在課堂作業呈現上有顯著性的成長。而尚未產生覺醒反應的學生，則在課程學習、互動與課堂作業表現上有極大差異，究其原因有三點：1.因過去基礎能力不足而缺乏自信，因而出現學習障礙而降低自主性、2.基礎能力足夠，但有一定惰性及懶散而缺乏自主性、3.課間表現出自我感覺良好而有驕傲感，拒絕再成長而失去自主性。而產生自主學習的覺醒反應學生們，無論是自主精進基礎能力外，也有高度的師生互動，並在課堂作業的創意表現與課外理論知識探討上有顯著成長。本研究經由作品集設計課程規劃與教學所獲取的學生表現樣貌與成效，除了可提升學生的自主性學習意願外，也培養出學生對作品集呈現與設計能力的成長。藉此研究成果可供其他相關作品集課程規劃及相關研究參考。

關鍵詞：自主性學習、自主性表現、課程規劃


Study on the Performance of Students' Autonomy from the Course Planning of Portfolio Design

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Abstract

This study uses the planning and teaching of courses design to understand the performance of students' independent learning and promote students' self-learning energy. The target is to enhance students' psychological self-expectation and to gain effective learning and ability in designing performance and willingness to learn independently. This study through the three stages of teaching and guiding, awakening students' independent learning and analysis of works. With individual of staged homework, understanding problems, and encouraging students to grow, observe the students' awakening process. Study result that most students can follow the course, and interaction with teachers, generate the awakening of independent learning, and have significant growth in the and have significant growth in the homework. Students who haven't yet responded to the awakening have great differences in course, interaction and homework for three reasons: 1. lack of self-confidence due of basic ability, learning disabilities and lacking autonomy. 2. sufficient basic ability, but being inert and lacking autonomy. 3.self-complacent and refusing to grow and losing autonomy. In addition to self-improvement of basic skills, students with awakening responses to self-study also have interactions, and grown up in the homework and extracurricular knowledge. This study through the courses to obtain the student's performance, can enhance willingness to learn independently, and cultivate ability and design portfolios. This results can be used as reference for courses planning and related research in related.

Key words: Autonomous Learning, Autonomous Performance, Course Planning
探討應用翻轉教學 SPOCs 的模式與合作學習策略於統計學之學習成效

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傳統的講述式授課教學，學生缺乏主動學習機會，容易造成學生滑手機或是打瞌睡，使得學習成效低落，隨著教學科技工具的大量興起，翻轉教室的教學潮流近年來盛行於各階段的教室中，本研究應用翻轉教學 SPOCs 的模式與合作學習策略在統計學之學習，受試者為某國立大學管理學院大二同學共 60 位為實驗組，而前年以傳統講述式授課之 60 位學生為對照組，比較新的教學策略學生之學習成效是否有差異。受測程序上，對照組為傳統上課教學，實驗組則老師上課，搭配 SPOCs 影片教學與小組討論，研究結果發現：利用 SPOCs 的模式，學生在課堂中聽不懂之處，可以重複觀看影片複習，有助於課程內容的理解；而課堂中施行合作學習策略，學生能主動參與互相討論與練習，不再滑手機或是打瞌睡，提升學生的自主學習與協同合作能力；最後應用翻轉教學 SPOCs 的模式與合作學習策略，使得學生之學業成就顯著高於傳統講述式授課。

關鍵字: SPOCs、合作學習、翻轉教學
Exploring the application of flipping teaching SPOCs and cooperative learning strategies to Statistics learning effectiveness

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In traditional narrative teaching, students lack active learning opportunities and easily to play on the phone or doze off. This makes the learning ineffectively. With the rise of teaching technology tools, flipped teaching comes to prevail in all stages of the classroom. This research applied the SPOCs in flipped teaching and the cooperative learning strategy in the teaching of Statistics. The subjects were 60 sophomore students in the management school of a National university. The traditional narrative teaching class was used as the control group. The difference between traditional teaching and flipped teaching are compared based on students' achievements. The results show that students can repeat to review the films, which helps them to understand the content of the course. While the cooperative learning strategy is implemented in the classroom, students can actively participate in mutual discussion and practice. This improves the students' self-learning and collaboration ability. Finally, applying the flip teaching SPOCs and the cooperative learning strategy makes the students' academic achievement significantly higher than the traditional.

Keywords: SPOCs, Cooperative Learning, Flipped teaching
磨課師融入商管課程學習翻轉教室對學生
自主學習影響之行動研究

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摘要

翻轉教室改變過去以教師的教學為主體核心, 讓學生的學習成為教室的新主體。透過學生學習本位, 帶動不一樣的教與學的歷程。磨課師融入學習的創新教學, 能夠滿足上述不斷改變創新之學習環境和方法的要求, 讓學生從被動學習發展到主動學習的創新教學模式。本研究以逢甲大學合作經濟暨社會事業經營學系大三必修財政學與非營利組織與管理兩班課程參與學生個案為例, 論述透過磨課師融入班級個別學生與全體學生學習自主行動研究之模式結果與反思。

本文以上述兩門課程為例, 探討如何分別針對個別學生與班級學生融入磨課師自主學習的課程設計、教學模式與評量方法。研究方法包括質性與量化研究, 前者透過學生自主學習筆記心得作業與個別自主學習學生深度訪談資料, 進行質性分析研究; 後者透過學習者相關問卷調查與測驗評量結果, 進行統計分析之相關量化研究。兩門課程學生透過導入適切的磨課師課程的自主學習規劃、教學引導活動、課程主題之作業撰寫與班級同學相關個案撰寫作業的互評機制, 進行自主學習; 課程融入磨課師模式, 包括: 班級特殊學生之客製化個別自主學習, 全班同學分組進行團隊自主學習與班級全體共同自主學習三種模式。

課程融入磨課師相關課程教學結果, 顯示無論個人、分組或班級學生, 透過導入適切的磨課師課程的自主學習規劃、教學引導活動、課程主題之作業撰寫與班級同學相關個案撰寫作業的互評機制, 均有助於改善學生個人或班級學生該課程之綜合學習成效, 成為有效的自主學習者。透過行動研究過程與分析結果, 教師獲得教學與課程專業成長; 學生的學習成效, 會因學習動機、壓力與學習模式的不同而異; 根據研究結果提出結論與未來研究與教學改進方向之具體建議。

關鍵詞: 磨課師、翻轉教室、融入學習、自主學習、行動研究
An Action Research on MOOC Blended Learning and Self-Regulated Learning

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Abstract

Feng Chia University has employed the Outcome-Based Education (OBE) since 2003. These outcome measures are not stressed upon the participatory practice but the capabilities towards workplace. After studying the course action research before, during and after the course of the MOOC Blended Learning flipped classroom and Self-Regulated Learning. The instructor’s innovative teaching integrated into learning can meet the requirements of the above-mentioned changing learning environment and methods, and enable students to develop from passive learning to active learning.

The cyclical model of self-regulated MOOC blended learning has been used to improve undergraduate students' Public Finance and Nonprofit Organization and Management courses through individual, group and class self-regulation learning methods: monitoring associated with self-evaluation, goal setting and strategy planning, monitoring associated with efforts to adapt the strategy from outcomes. The curriculum self-regulated MOOC blended learning mode includes three modes: individual student self-learning, student grouping self-learning, and class-wide self-learning, making appropriate cyclical adjustments in instructional models and multiple measurement process.

Through action research, results showed that regardless of the individual, group or class students, through the introduction of appropriate MOOC courses self-learning planning, teaching guidance activities, course theme assignments and classmates’ related case writing assignments, allows students the ability to develop lifelong learning, independent study to become effective learners, and the researchers benefited from professional growth and reflection. The study has come to a few conclusions which aim for practitioners and future studies.

Key words: MOOC, flipped classroom, blended learning, Self-regulated learning, action research
資訊融入邵族民俗植物主題探究課程之行動研究

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摘要

原住民族群，長久在山林原野或鄰近海洋之地生活，與大自然接觸的機會極為密切，部落裡清楚知曉如何將植物應用於生活中的耆老已經不多，邵族是台灣原住民人數最少的其中一支，能清楚了解民俗植物使用的人更是少之又少。

本研究乃針對教師從教育現場發現「學生欠缺對於民俗植物使用之瞭解的問題」，故採取行動研究的模式，探討邵族民俗植物融入國小主題課程可行性。第一個階段主要以邵族民俗植物的調查訪談並進行教學現場觀察，同時釐清研究問題。第二階段則根據學生的反應進行文化回應教學，第三階段針對課程實施的過程進行檢討、評估、省思和修正實施。

在教學的實踐裡，學校與教師所處的角色為何？多數教師因為受到主流文化的影響，會產生文化識盲的現象，在教學上無法體會教育與文化傳統的關係，更因專業素養不足、缺乏足夠的文化知識去了解少數族群的文化價值。因此，從事民族教育的實踐，教師們帶著什麼樣的「知識」，往往是教學成敗與否的重要關鍵。

本研究發現：
一、「邵族民俗植物及文化知識」，對於全校教師覺得陌生且有困難度，在課程進行中老師產生了無力及壓力；
二、教師因為受到主流文化的塑模，在教案的設計與討論中，很難跳脫長久建立的漢族觀點；
三、透過教師專業學習社群及工作坊研討方式，有助於課程檢討與發展；
四、為能針對學生族群之特性採取有效的教學策略，教師必須對多元文化概念及族群文化內涵具更深一層的認知與了解；
五、推動地方本位教育課程，有助於學生學習原住民文化之學習興趣及成效。

關鍵字：地方本位教育、民俗植物
Action research on the exploratory courses of Thao’s ethnobotany with Information Technology

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Summary

The indigenous peoples have been living in the wilderness or land adjacent to the sea for a long time. The opportunities for them to connect with nature are extremely high. The elders in the tribe who clearly knows how to apply the knowledge of plants to our life is becoming less and less. The Thao people have the least population among all the tribes in Taiwan so there are extremely few people who can clearly understand the use of ethnobotany.

This aim of the study is to find out the problem of students' lack of understanding of the use of ethnobotany from the educational scene. Therefore, the mode of action research is adopted to explore the feasibility of integrating the ethnobotany of Thao into the national theme curriculum. In the first stage, the investigation and interview of the ethnobotany of the Thao nationality were mainly conducted and the teaching site was observed, and the research questions were clarified. The second stage is based on the student's response to the cultural response teaching, and the third stage is to review, evaluate, reflect and correct the implementation of the course.

In the practice of teaching, what are the roles of schools and teachers? Most teachers will be influenced by the mainstream culture, which will lead to cultural blindness. In teaching, they cannot understand the relationship between education and cultures. Also, lack of professionalism and cultural knowledge makes them incapable of understanding the cultural value of minorities. Therefore, the "knowledge" that the teachers are equipped in the practice of national education is often an important key to the success or failure of teaching.

Finding of the study
1. "ethnobotany of Thao and cultural knowledge", which is unfamiliar and difficult for all the teachers in the school, making it a big pressure for teachers teaching this course;
2. Being influenced by the mainstream culture, teachers are hard to escape the long-established Han nationality perspective in the design and discussion of teaching plans;
3. It will help the curriculum review and development through the teachers’ professional learning group and workshop discussion;
4. In order to adopt an effective teaching strategy for the characteristics of the students’ group, teachers must have a deeper understanding of multiculturalism and the cultural connotation of the ethnic group;
5. Promoting local-based education programs will help students gain interests and effectivenss in learning Aboriginal culture.

Keywords: Place-Based Education, ethnobotany
校園閒置空間與場域活化之研究—以一所偏鄉小學為例

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摘要

臺灣教育正面臨少子化的衝擊，國民中小學新生人數普遍遞減，隨之班級數減少、教師超額、閒置教室增加等情況隨之產生，部分學校甚至面臨併校或廢校之危機。而校園產生大量閒置空間，如未能善加管理使用，除公共資源浪費外，更可能成為社會治安及環境衛生之死角。據此，引發另一波校園空間活化新思維，教育部更是積極推動國民中小學空間活化及發展特色學校計畫。

利用既有的閒置校舍校園空間等教育公共財，充分發揮校園空間價值，以活化校園，並配合在地特色資源與人文特質，規劃多樣性的教育功能，尋求學校存在的永續價值與新生命力；同時擴大校園空間效益，結合地區性特色環境、產業文化等，提供優質、多元、豐富之課程發展素材，讓閒置場域活化與重生。

本研究以探討個案學校活化校園閒置空間場域，採個案研究，以半結構式訪談、參與觀察及文件分析蒐集資料。藉以瞭解個案學校推動校園閒置空間活化再利用時，如何就學校背景分析、規劃與設計，同時了解個案學校採取之理念、方法與策略，提供其他學校借鏡，並提出結論與建議。

研究發現如下：
個案學校透過空間活化可創造新價值；
空間活化之原則應掌握因地制宜以發揮最大效益；
個案學校規劃設計以學生教學需求為首要考量以提升學生學習成效；
個案學校善用教師專業學習社群活化優質教學環境；
結合地方本位繫統與地方共生共榮永續發展。

本研究提出建議：
引入校園閒置空間與場域活化之相關補助計畫；
擬定校園空間活化計畫，確保校園閒置空間活化符合學校整體需求；

規劃校園空間活化，應結合地特色資源與人文特質；

校園空間活化應搭配相關課程，使活化空間，達永久使用之成效；

校園活化空間除供學校課程及教學使用外，應開放給外界與社區租借使用，使活化空間發揮最大的效益。

關鍵字：校園空間活化、校園閒置空間
The Study of The Activation of Vacant Space and Field in Campus - Take a Remote Elementary School for Example

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Summary

Education in Taiwan is facing the impact of declining birthrate. The number of the elementary students of first grade enrolled in primary and secondary schools is generally decreasing. As a result, the number of classes is reduced, teachers are over-subscribed, and more classrooms are idled. Some schools are even in the crisis of merger or abolishment. A large amount of free space exists on campus. Should not managed well, it will become a corner of social security and environmental sanitation in addition to the waste of public resources. Based on the needs, another wave of campus space activation is triggered. The Ministry of Education is developing special programs to promote the spatial utilization of national primary and secondary campuses.

The research team uses existing idle space and other public resources to add the value of campus space. Embedded with localized characteristic and humanistic quality, we plan the diverse functions in education to seek sustainable value and new vitality of the school. While expanding the efficiency of campus space, we combine with regional characteristics of the environment, industry, culture, etc. to provide high-quality, diverse, rich development of curriculum materials to make it rebirth.

This case study explores the target school in activation of the idle space in campus. Data was collected by semi-structured interviews, participation observations, and document analysis. To promote the re-use of empty space, the ideas, methods and strategies adopted by the case schools are introduced. How to analyze, plan, and design according to the school background are also discussed. This study provides a benchmark reference for other schools, and make conclusions and suggestions.

Results are shown as follows:
1. Case school can create new value through space activation.
2. The principle of space activation should be based on local conditions to maximize the benefits.
3. Planning and design of the space activation should consider the needs of students and aims at improving the students’ learning outcomes.
4. Case schools should make good use of teachers professional communities to activate a quality teaching environment.
5. Space activation should combine local standards to create local prosperity and sustainable development.

Recommendations of this study are:
1. The program should introduce subsidies related to campus idle space and field activation.
2. Making a plan of the campus space activation ensures that the overall meets the needs for the activation of free space of the school.
3. Planning the activation of campus space should combine the characteristics of resources and human characteristics.
4. Campus space activation should be accompanied by relevant courses to make the activation space reach the effect of permanent use.
5. In addition to the school curriculum and teaching use, the campus activation space should be opened to the outside world and the community to rent and use, so that the activation space can maximize its benefits.

**Keyword: campus space activation, campus idle space**
運用實作教學創造一門受歡迎的課程

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摘要

跨境電子商務是一門近年因應時代潮流而興起之課程，內容橫跨理論及實務操作，以「做中學」為課程設計指引，將傳統課程中授課者與學習者的角色進行互換，授課者不再是主角而是課堂中的引導者，學生才是課堂中的主角，以成果導向實作課程設計依據，設計以實作教學活動：(1)網購經驗實作、(2)找尋商店的共通點、(3)找尋顧客要的商品、(4)實體店舖設計、(5)企劃案實作前導－心智圖、(6)企劃案實作、(7)企劃案競賽，以深化學生之邏輯思考能力、創造力、溝通力。每項教學活動均設計有個人或小組實作作業與分享，評分標準則依各教學活動設計有自評、同儕互評、業師評量三類。從學用合一的觀點出發，成果導向實作課程十分適合與跨境電子商務課程結合發展大學生跨境電子商務技能。經由期末授課意見及課後意見調查得知，同學對本課程持正向看法，對實作課程有興趣，「以學習者中心」的學習方式的確可以把學習者的學習動機重新找回，並透過實作設計可以提高同學的學習成效。

關鍵詞：以學習者中心、成果導向教學、實作教學、跨境電子商務

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Utilizing Hands-on learning in creating a successful course

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Abstract

Cross-Border E-commerce is a newly developed course to meet the rising trend of international e-commerce crossing countries, which is constructed with theory base and hands-on activities to motivate students interests in active participation and reinforce learning outcome. The curriculum is centered on “learning by doing”, the teacher acts as a facilitator providing feedbacks and answer questions when needed, the hands-on activities are as the following: (1) hands-on operation/management in e-shop, (2) search for e-shop key characteristics, (3) search for customer-preferred goods, (4) physical store (bricks and mortar) design, (5) Pre-proposal writing-Mindmapping, (6) business proposal writing, (7) proposal presentation competition. Each activity is implemented by individual and group work and is assessed in form of self-evaluation, peer-evaluation, and lecturer graded. Students have the opportunities to develop logic-thinking, creativity, and communication skills through designing and group work and to facilitate higher cognitive competence in (utilization, analyze, evaluate, and innovation). The result of after-class student survey shows that even students are required to work harder in classroom, positive feedback were given toward hands-on learning at the end of semester. A learner-centered teaching can facilitate a more collaborative way for students to learn and deeply bring up the experience to life and work.

Keyword: learner-centered, outcome-based education, hands-on education, cross-border e-commerce
專題製作課程結合鷹架理論與翻轉教學模式

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摘要

本研究旨在翻轉過去對專題製作的既定模式乃是以學術為導向的論文寫作為主，試圖運用鷹架理論為基礎，從業界端及多元化之輔助教學給予周全的專題製作背景導向說明，另外，運用翻轉課室的精神及技巧，如運用 line@和 e-learning 平台做課前、課後的複習，課室中以成全別人成功的氣氛且和諧的小組討論合作，共同完成符合其專業模組之專題，進行創意、有趣且能發揮同學專業能力的專題製作。第一學期結束前，90 位同學共 17 組，分別完成前三章的企劃書。其間，我們前往四個企業参訪地點並安排業師到課堂上分享及接受學生提問，協助釐清學生不懂之處，致使同學們的企劃書更貼近企業所需。學期結束前所有同學進行計畫主持人製作的第一份問卷共 15 個題目，採 1-4 四點式量表(非常不好~非常好)，問卷信度達 ($\alpha = .957$)。此問卷意圖瞭解同學們對鷹架的協助及翻轉的教學之滿意度，進行描述性統計及皮爾森相關分析，結果顯示同學們對鷹架的協助 ($r = .757$)及翻轉的教學 ($r = .852$)都達到正向顯著的滿意結果 ($p < .01$)。第二學期計畫主持人第一週的上課，即以上學期問卷的結果為例，先行分享問卷的製作要素及資料的分析過程與結果的解釋，希冀藉由此分享，同學們可以知道問卷的製作及接下去專題製作的流程。本研究仍然持續進行中，小組討論日誌的記錄及 17 位同學代表各組將接受訪談，為使受訪同學感到沒有壓力，全程由計畫案助理負責並完成逐字稿後交給計畫主持人進行資料的整理、解讀與分析。小組討論日誌及訪談結果將依據質性研究架構來分析，強化此研究的客觀性及貢獻度。第二學期末，各組的專題成果發表，將採用海報型式，以全英語之方式進行一個早上的公開發表。最後學期結束前會再提出一份問卷深入瞭解不同面向的意涵，期待此研究案的發現及結果可以使更多科技大學的老師願意改變專題製作的另一種教學模式，讓技職教育回到正軌，促使專題製作的方向與授課模式更為實務，有效增進各組的作品能符合業界之需。

關鍵字：鷹架理論、翻轉課室、專題製作、小組討論日誌
Integration of Scaffolding Theory and Flipped Teaching Approaches into a Team-based Project

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Abstract

The purpose of this project is to flip the traditional model used for team-based project production, that was, academic-oriented thesis writing. Instead, the project leader attempted to use the scaffolding theory as a fundamental framework, gained adequate input from the industry and utilized a diversified teaching support in order to give a comprehensive background for helping students make a team-based project successful. Also, this study adopted the strength and strategies of the flipped classroom by using line@ and e-learning platform for pre and post class review. Students were committed to others’ success and worked harmoniously while cooperating in flipped classrooms via group discussions. Working together to complete the topics related to their professional module, the topics students explored were creative and interesting, as well as helping them develop their professional skills and enabling them to carry out their team-based project successfully.

Before the end of the first semester, 90 students from a total of 17 groups completed the first three chapters of their proposals. In the meantime, students visited four different enterprise units and listened to their briefing. Also, three business experts were invited to the class, met the students and attended a question and answer time to deal with students’ questions in order to enable students' proposals to better meet the needs of the enterprise. At the end of the semester, all the students took a questionnaire developed by the project leader, consisting of 15 questions. The four-point scale was used (very bad~ very good); the reliability of the questionnaire reached to a very satisfactory value, α=.957. This questionnaire was designed to understand the students' satisfaction with the assistance of the scaffolding framework and flipped teaching. Descriptive statistics and Pearson correlation analysis showed that the students' satisfaction to both support reached to a significant positive result, assistance to the scaffolding (r=.757, p<.01) and flipped teaching (r=.852, p<.01).

In the first week of the second semester, the project leader used the results from the first semester survey as an example to share the production elements of a questionnaire, the analysis of the data, and the interpretation of the results. Hopefully, by sharing the initial findings, students would be able to understand the elements of developing a questionnaire and the process of carrying a team-based project. The study is still ongoing. The records of the group discussion logs will be assessed, and 17 representatives from the groups will be interviewed. In order to reduce the interviewees’ pressure, the project assistant will be responsible for the interview and will complete a verbatim draft. The project leader will later organize, interpret, and analyze the qualitative interview data. The group discussion logs and interview results will be analyzed based on the qualitative research structure to assess the contribution objectively. At the end of the second semester, the
results of each group’s team-based project will be presented using a poster. The poster presentation will be conducted all in English in a morning session. Before the end of the final semester, another set of questionnaires will be submitted to further understand the students’ perspective on cooperative learning, flipped classroom, and scaffolding support. It is expected that the findings and results of this research will benefit more science and technology teachers who are willing to change their teaching approaches, therefore restoring the original intention of technical education by re-shifting the direction of the team-based project work and making teaching more practical. The ultimate goal must effectively enhance the team-based project production to meet the needs of the industry.

Keywords: scaffolding theory, flipped classrooms, team-based project work, group discussion log
於科技輔助情境中進行英語口語表達教學及其效用

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摘要

演講乃國際職場上溝通之一種形式，雖然臺灣大學生大多自國小時期即開始學習英文，但英語表達能力仍有待加強。在大學英語演講課程中的學生，多為無經驗的演講者，從認知負荷理論角度而言，面對英語發表此新課程時，使學習者擁有成功經驗至關重要。Sweller認為，當學習活動需求的認知能力比學習者本身原先具備的認知能力更大時，即已超過學習者的認知負荷，易導致學習失敗。Skinner的行為學習論倡言將教材、教學內容細分成多個小單元，依次編列成由易而難的多層次教學法。由上述理論推論，透過適當排序的教材與學習活動，應可降低學習者之認知負荷，因此，本計畫以認知負荷理論及行為學習論為架構，調查學生對英語口語表達學習活動單元所認知的簡易困難程度和順序，據以構成了編序教學法，並運用影音科技輔助學習活動，提供不同於傳統的英語演講學習經驗：先從學生感到最有信心、引發最低焦慮的演說技巧開始學習，循序進行英語演說訓練活動，以強化學生表達技巧。本研究持續一學期，受試者為某科技大學應用英語系兩班英語演講課程之大三學生，一班為對照組 20 人，接受傳統教法及課堂演練但不接受科技輔助，另一班為實驗組 27 人，於課堂內接受結合科技之編序教學法。兩組在學期初、學期中、學期末各接受演講能力前、後測錄影。研究者比較兩組學生錄影，發現結合科技之編序教學法在短期時間內(學期中期) 就能有效地提升英語演講非語言表達技巧。雖然到學期末兩班表現無太大差異，但比較兩組在學期初，學期末非語言演講技巧之自我感受能力評量問卷結果時，發現結合科技之編序教學法能有效地提升實驗組自我能力之感受。此亦間接表示實驗組在學期末對自我能力得到較大的自信。另一實證性研究工具為開放式反思問卷，亦顯示實驗組學生對此教學法均持肯定看法。本研究實踐研究以認知負荷理論及行為學習理論之原則運用科技而予以循序漸進地實施聲音肢體技巧等訓練活動，不僅幫助學生較快地掌握實用性的表達技能，提升了學生對英語表達溝通能力的自信心，亦確立了一個有效的創新英語演講教學法。

關鍵詞：英語公共演講，認知負荷理論，程序教學
A Theory-Driven Approach to Teaching English Oral Presentation in a Technology-Enhanced Environment and Its Effectiveness

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Abstract

One of the communicative activities in the international workplace is presentation. Although most college students in Taiwan have studied English since their elementary education, there is still much to be desired in student’s English speech proficiency. Most students have no presentation experience prior to entering a new presentation course in college. From the viewpoint of the cognitive load theory, it is important to create mastering experience in them at the onset of the class. Sweller suggested that when the cognition load required for learning new materials exceeds the learner’s cognition capacity, the learning is prone to failure. Skinner advocated to break teaching materials into smaller units and to arrange them from easy units to difficult units to form programmed instruction. Based on the two theoretical frameworks, this research proposes a programmed sequence of approach to the teaching of various nonverbal delivery skills of an EFL speech. Its effects on EFL learners’ public speaking performance and their perceptions on the approach were explored. This semester-long study is a mixed-methods research in nature. Quantitatively, the research adopted a pre-test-post-test quasi-experimental research design. Two intact classes of junior English majors enrolled in English Public Speaking courses at the same university took part in this experiment. Twenty students in the control group received traditional presentation delivery practices that were not technology-related, while 27 students of the experimental group received a series of sequenced pedagogy aided with technology. To verify the effectiveness of this approach, pretest and posttest presentations and quantitative data from a perception survey were gathered for comparison from both groups before and after the treatment. The results showed that the experimental group’s nonverbal performance improved significantly in the middle of the project. Although at the end of the project both groups demonstrated similar levels of nonverbal delivery abilities, the experimental group’s self-evaluation of nonverbal skills was significantly higher than that of the control group. It also indicated the experimental group had more confidence in nonverbal presentation skills. Through reflective surveys after the treatment, the experimental group verbalized a predominantly high degree of acceptance toward this approach and expressed positive thoughts on the perceived usefulness and benefits for engaging in the technology-embedded programmed instruction. The implication is that technology-embedded programmed instruction can facilitate the acquisition of nonverbal skills in a relatively short time and enhance EFL learner’s confidence in English communicative competence. On top of traditional instruction, this
research, based on cognitive load theory and the principle of programmed instruction, validated a technology-enhanced programmed approach to English speech education.

**Key words:** English public speaking, Cognitive load theory, Programmed instruction
在大學英語寫作課堂中運用自動寫作評量系統

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近幾十年來，自動寫作評量系統/軟體（簡稱AWE）已經被廣泛應用於評量第二外語言學習者的英語寫作表現。自動寫作評量軟體採用人工智能系統（AI）和大數據給予學習者即時回饋。過去的研究報告顯示，透過自動寫作評量不斷的給予學習者回饋與建議，EFL學習者可以有效地提高他們的英語寫作能力。儘管研究報告顯示自動寫作評量軟體在論文寫作中對外語學習者有益處，但很少有研究去探究使用自動寫作評量軟體的頻率多寡是否可以提高學習者的英語寫作技巧。特別是，學習者使用AWE系統，頻繁的修改文法錯誤和用字，似乎在文法能力有進步，但對於寫作內容的進步與否仍不清楚。因此，在本研究中，我們想知道那些經常使用自動寫作評量軟體的第二外語學習者，他們的整體寫作表現是否將優於那些很少使用自動寫作評量軟體系統的學習者。

這個研究在國立嘉義大學的英語作文課上實施了八週。外語系的二十七名二年級學生參加了這項研究。在課程第一週，學生們學習如何利用自動英語寫作評量系統（AWE）修改他們的論文。本研究使用批改網作為數位批改寫作工具，幫助EFL學習者修改他們自己論文。這期間每個星期授課教師提供寫作作業，學生每一週都需要使用批改網來修正自己論文。在第八週，進行了後測寫作任務。學生的論文寫作成績由授課教師批改。學生分為兩組：實驗組為學習者經常使用AWE系統修改寫作草稿（14名參與者），控制組為學習者較少使用AWE系統修改寫作草稿（即13名參與者）。我們比較兩組之間的寫作分數。實驗結果顯示實驗組的平均寫作得分（平均得分=86.7）略高於對照組的得分（平均得分=83.4），但兩組分數沒有達到顯著性差異。結論，本研究探討在大學英語寫作課程中，運用自動寫作評量系統，增進學生英語寫作表現的可行性。

關鍵詞：自動寫作評量軟體，反饋，批改網，第二外語寫作、頻率
Using an Automated Writing Evaluation System in the College English Composition Classroom

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Abstract

In recent decades, the Automated Writing Evaluation (AWE) system has been widely applied to evaluate English writing performance of language learners. An AWE system adopt artificial intelligence system (AI) and big data to generate instant feedback. Through continuous feedback, some past studies reported that language learners can improve their English writing performance effectively and efficiently. Even though the AWE system is beneficial to L2 learners in essay writing, little research has investigated whether the frequency of using the kind of system can improve leaners' English writing. In particular, it is not clear if EFL learners frequently revise the drafts based on the suggestions given by the AWE system, their English writing skills could be more improved or not. Therefore, in this study, we would like to know when EFL learners use the English automated writing evaluation (AWE) frequently, their overall writing performance will be better than those seldom using the AWE system in writing.

This study was implemented for eight weeks in an English Composition class at National Chia-Yi University. There were twenty-seven sophomore students from the Department of Foreign Languages participating in this study. At the beginning of the class, students were instructed how to revise their essays via an automated English writing evaluation system. We selected the Pigai System as the AWE tool, which is a web-based writing tool to help L2 learners write and revise their essays on their own. At the eighth week, a post-test writing test was conducted. Student's essay writing scores were evaluated by the class teacher. Students were classified into two groups: learners frequently revising the draft via the AWE system as the experimental group (i.e., 14 participants) and learners seldom revising their drafts via the AWE system as the control group (i.e., 13 participants). The writing scores between two groups were compared. The results show that the mean writing scores of the experiment group were higher (i.e., mean scores = 86.7) than the scores of the control group (i.e., mean scores = 83.4) even though it did not reach the significant difference. To conclude, this study has the implication for college EFL instructors in designing an effective English composition class via applying the automated writing evaluate system.

Keywords: Process-based writing pedagogies, self-correction, English essays, second language, frequency
融入美感教育對校園建築美學影響之研究

--以技術型高中專業課程為例

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摘要

台灣實施技職教育從 70 年代初始已三十餘載，揭示國中生得以興趣自由修習技藝課程，但技職教育仍未能向下落實扎根，再者，社會大眾對技職教育普遍存在勞工階層的偏見，使得技職教育淪為「次等」升學選擇。前教育部長吳思華也列舉台灣技職教育面臨的 5 大問題，包括技職從業法規落實、高職技職師資專業普遍不足、技職課程空洞無法縮短教育與就業職場的落差、社會大眾對技職教育認知不夠瞭解、產學合作無法落實技職生潛能開發與協助產業創新。

當前各級技職學校未能切合技職教育辦學意旨，使技職辦學被迫向「普通學科教育」靠攏，以升學為前提，缺乏課程特色。技職教育課程應具備生活化，社會職場核心對焦，強化學生以專業定向為目標的學習精神，從課程中以生活導入教育入深入淺出課程培育，讓學生有參與感，並且從學習中讓學生具備職場實務的能力。以個人執行校園美感環境再造計畫的經驗發現，雖然學校內有建築及設計相關類科，但是卻往往發現如果這些老師能有更多的實務經驗或是學生能有更多的美感教育課程，我想校園將會是被創造成更具美感的學習環境。

美感教育是國家競爭力的希望，面對社會急速變遷與日新月異的趨勢與挑戰，未來所需的人才必須具全球視野的現代公民素養，透過健全藝術與美感教育制度、教師潛能、課程與教材研發、社會資源整合、以及社會好藝愛美風氣的形塑，才能具體落實，符應各界需求。建築美學是一種必須融合環境現象、文化分析、人文剖析、美感教育、視覺色彩應用及生態探討等等的學習教育。本次研究對象是針對技術型高中建築科或空間設計類組學生，為技職深根教育學習論述，並以校園美感規劃設計專題案例，採行動研究的方式來
探索技職生對自身學校美學教育參與、透過進階實務操培養出學生自信心、學習成就與學習成果對校園建築美學展現，提供專業實務操作與課程教學分享，做為中等技職教育深耕與啟蒙教育教學的改革轉化應用。

關鍵詞：美感教育、技術型高中、建築美學
The Influence of Integrating Aesthetic Education on Campus Architecture Aesthetics – An Example of Technical High School Programme

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Abstract

Vocational education has been implementing more than 30 years in Taiwan since early 1970s, showing that students in Taiwan have the freedom to take their skill-training courses. Vocational education, however, has not yet built its foundation. In addition, the public has a prejudice against vocational education owing to the fact it’s for the labor. The prejudice has made the vocational education an “inferior” academic option. Wu Sihua, former Education Minister, also listed five major problems Taiwan’s vocational education faces, including regulating technical and employment, the shortage of vocational and technical teachers, the inability of technical and vocational courses to shorten the gap between education and job, vocational education’s not being well understood, and industry-university cooperation’s failing to develop students’ potential and to benefit industrial innovation.

At present, vocational schools at all levels fail to meet the purpose of running vocational education, which makes technology-based schools move closer to “general subject education”: academic-oriented and lack of curriculum characteristics. Vocational education curriculum should focus on the core of real life and workforce, and strengthen students’ learning attitude toward their profession. From life experiences to the in-depth cultivation, the curriculum gives students a sense of participation, and the practical skills needed in the workforce. Based on aesthetic campus rebuilding projects, it is found that, even though there are architectural and design-related subjects in the school, I think campus will have greater aesthetic value if these teachers have more practical experience or students have more aesthetic education course selections.

Aesthetic education is the hope for better national competitiveness. With the rapid changes of society and the ever-changing trends and challenges, the talents needed in the future must have a modern global perspectives. Only by fulfilling the following points can aesthetic education be concretely implemented and meet the needs of all walks of life: the improvement of art and aesthetic education system, teacher empowerment, research and development on curriculum and teaching materials, the integration of social resources, and the shaping of social aesthetics. Architectural aesthetics is a kind of learning education that must integrate into environmental phenomena, cultural analysis, human analysis, aesthetic education, visual color application and ecological discussion. This research is aimed at students majoring in architecture or
space design in technical high school, devotes to studies on vocational education, and designs topics on aesthetic campus planning. This research adapts action research to explore how vocational school students participate in school aesthetics courses. Through the advanced practical operation, students’ self-confidence, learning achievements will be displayed on the aesthetics of campus architecture. Furthermore, professional practice and curriculum teaching will be shared, and this will be taken as transformation and application for secondary vocational education and enlightenment education.

Key words: Aesthetic education, technical high school, architectural aesthetics
應用個案教學法探索與反思性別教育之意涵

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摘要

性別相關課程是大學評鑑的重要指標之一，本教學實踐研究即以性別教育為主題，以通識教育課程「性別與社會」為授課科目，選修本課程大學生 57 人為教學對象，以自編個案、新聞時事、網路文章為教材，以行動研究為方法，規劃一個學期 18 周的課程內容，從經驗學習、參與式學習以及隱喻學習等三個方面討論個案，把知識、能力和態度整合運用在情境化、脈絡化的學習過程中，強調學習歷程與策略，透過實踐力行的表現評量學習成效。在多元案例中帶領大學生了解、體會性別與人類生活社會的關係，這些議題與大學生們的未來生活、工作、家庭、戀愛與婚姻等議題息息相關。本教學實踐研究發展具有創意的教學方法與風格，在進行了 18 周課程之後，學生的上課態度轉變、嘗試與他人合作、閱讀與理解案例中的意涵、了解小組討論與分享的目的。整體而言，案例教學對教師是個有挑戰性的教學策略，對學生則是個必須不斷反思與討論的學習方式，本研究分享大學課程引入個案教學，作為性別教育課程之參考建議。

關鍵詞：個案教學、參與者中心教學法、隱喻學習、性別教育、大學生
Applying Case-Teaching to Explore and Reflect the Meaning of Gender Education

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Abstract

Gender-related course was one of the most important indicators of university evaluation. This teaching practice study was the theme of gender education, general education curriculum "Gender and Society" as the teaching subjects, 57 college students as the teaching object, with self-made cases, news events, and online articles as teaching materials, action research as research method, and planning 18 weeks course contents. Discuss cases from three aspects: experience learning, participatory learning and metaphoric learning, Integrating knowledge, abilities and attitudes into contextualized learning, and evaluated learning effectiveness through practice. To lead students to understand and feel the relationship between gender and society during multiple cases and these topics were related to college students’ future life, work, family, love and marriage. This teaching practice research developed creative teaching methods and styles after 18 weeks of courses, Students' attitudes in class toward change, trying to corporate with others, reading and understanding the meaning of the cases, understanding the purpose of group discussion and sharing. On the whole, case teaching was a challenging teaching strategy for teachers, and a learning method that must be constantly reflected and discussed for students. This study shares the demonstration of case-based teaching in university courses as a reference for gender education courses.

Keywords: Case Teaching, Participant-centered Teaching, Metaphoric Learning, Gender Education, University Students
注入藝術及社會關懷的遊憩治療課程設計與實踐

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摘要

面對急遽變化的全球經濟，台灣如何在國際舞台中安身立命，高等教育的變革扮演關鍵的角色。教育部揭橥其教育願景提出，未來世代面對網路等大量文本，學生學習不再侷限於書本上的知識，應是學習帶得走的能力，教育場域亦應隨之轉變。

高齡化速度快速的雲林，針對該族群的規劃與照護方案的推動刻不容緩，故除政府政策的推行外，教育學生透過理解地方，重新定義問題，規劃解決方案則屬教育面重要的課題之一。本研究相關課程之規劃以遊憩治療研究為主軸延伸與發展，透過休閒活動等形式，引導學子先從環境出發，重新認識與發現自己。其次，規劃以實地蹲點(Residence)、調查研究(Research)以及創新改革(Reform)等三大面向構成的3R，推動漸進式社會服務之反思。

本研究以實驗法(無對照組)設計，40 位日間照顧中心長者持續參與 5 週遊憩治療活動，課程選修參與者共 15 位，進行活動設計與實施。受測長者以「整體福祉效益評估量表」進行前後測，量表分析發現長者在生理、心理、社交面向有成長，認知與經濟則變化不大。受測學生在質性心得資料與自主學習量表分析中發現，學生喜愛更多自主學習，自評學習過程中自我的心理成長大過於知識的累積，發現同儕間的督促與合作很重要，期待教師與學生的關係維持在朋友共學的關係。

關鍵詞：遊憩治療、學習取向、藝術社會關懷
The Design and Implementation of a Recreational-Therapy Course with the Spirits of Art and Social Care

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Facing the changing global economy, the revolution of higher education plays a crucial role for Taiwan to stand well in the world. The ministry of education says that for the future generation to face the vast amount of documents in the internet and others, learning is no longer limited to knowledge on the books. They have to learn carry-on capabilities.

For fast aging Yun-Lin County, the promotion of care plans for the elders is urgent. In addition to government policy, to teach students how to know the local culture and then make plans is an important topic in education. The courses in this research are mainly on recreational therapy. By way of recreational activities and others, we lead students to start their environments the find themselves. We promote social services with the so called 3R, namely Residence, Research, and Reform.

This research has an experiment on 40 elders in day-care centers, who participated in a 5-week recreational therapy activity. They are 15 students taking this course, who design and implement the activities. The elders are tested with an “global welfare benefit evaluation scale” before and after the activities. We found that the elders have improvement on physical, psychological, and social facets. We also found that the students love more self-learning. Self-psychological growth is more the knowledge accumulation in the learning.

Key words: recreational-therapy, learning orientation, art and social care
數位遠距課程與傳統課室教學成效之比較－以「文學與人生」數位課程為例

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摘要

2018年1月通過教育部數位課程認證之「文學與人生」，此為筆者任教多年的國文必修課程。2017年試圖改變課程之上課型態、教材介面、教學策略、教與學無縫交流等，並靈活運用所學之教學新法融入數位課程中，舉凡學生同儕學習、互動之TBL(Team-based Learning)、團隊搶答之課程活動等，並執行遠距教學之同步、非同步及面授等策略性的教學方式，實施內容準以教育部數位課程之八大規範37項指標進行之，舉凡科目說明、維持學習動機、學習者與教材互動、師生互動、同學互動、學習評量、教學管理服務、平臺功能檢核等，均以達A+等級操作之，不啻深受學生之喜愛與正面回饋，足見此課程於翻轉與革新教學確具成效。

筆者孜孜於教學現場，深知傳統課室教學之優劣成敗之因，欲與目前已具成果之數位遠距課程教學成效做一比較，使教學與研究相輔相成、互為參考，進而使教學策略能有根有基，不流於追求新穎而忽略傳統優點，亦不因著於課室單向講述而輕看學生自主學習的重要性，故本計畫欲以「數位遠距課程與傳統課室教學成效比較－『文學與人生』數位課程為例」，比較兩者之教材介面、教學現場、學生自主學習、師生互動、同儕交流、評量表現與課後反思等成效之良窳，得失，以供教學者之實質有效之參考依據。

本計畫以同一門課程「文學與人生」之數位遠距與傳統課室教學，透過二者不同之教材介面－數位/書本、教學現場－網路/課室、學習動機－主動/被動、師生與同儕互動－線上/面談、評量表現－線上/書面、反思作業－線上/紙本等，以比較法探討兩者之教學成效、學生學習態度與回饋反應；又以二者之問卷結果，進行逐項與交叉比較，以明其二者間之差異、優劣、得失等面向。目前已完成修過本課程之學生進行數位課程部分與傳統課室部分之書面問卷調查，觀察二者在時間、空間、學習態度、同儕合作、學習路徑、學習範圍等向度，進行成效之比較與分析。

關鍵詞：數位課程、數位課程認證、遠距課程、傳統課室教學、文學與人生
Compare digital distance course teaching with traditional classroom teaching—A case study of a digital course in” Literature and Life “

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Summary

"Literature and Life" a compulsory course in Chinese subject, which I have taught for many years. In January 2018 this digital curriculum was certified by MOE.

In 2017 I tried to change my teaching type in the course, every textbook interface, teaching strategy, seamless communication between teaching and learning, etc. And then I flexibly used the new teaching method that I have learned to integrate into the digital curriculum. Let students learn from one another peers, Interactive TBL (Team-based Learning), team answering course activities, etc. And further used distance education in synchronous, asynchronous and face to face three strategy teaching methods to teach courses. All courses made and performed must reach to A+ level according to 8 directions and 37 indexes ruled by the Ministry of Education – subject descriptions, learning motivation to maintain, the interaction of learner and teaching material, student and teacher, student and student, learning results assessment, teaching management service, platform functions check…etc. The course not only students loved it but also it passed through MOE certification, so the course performance earned recognition for achievement of flip and innovation in teaching.

I know deeply why makes the effect of traditional classroom teaching good or bad, I am willing to compare the digital distance course teaching which have been effective with the traditional classroom teaching in order to make the two ways to complement each other. And then because the teaching strategy based on a stable foundation. it was neither just for the pursuit of new way, neglecting advantages of he traditional classroom teaching nor just for teaching, ignoring the importance of students autonomous learning. So that I made this program- Compare digital distance course teaching with traditional classroom teaching – A case study of a digital course in “Literature and Life”, I would like to offer a teaching reference for teachers by comparison between the digital distance course teaching and the traditional classroom teaching, good or bad and gains or losses, in teaching material interface, teaching site, students autonomous learning, the interaction of learner and teacher or student and student, learning results assessment, reflecting after class.

In this project I taught the same course "Literature and Life" by two ways, distance and traditional classroom teaching, through different textbooks - digital / book, teaching site - network / classroom, learning motivation - active / passive, division Interaction between students and colleagues - online / interview, evaluation performance - online / written, reflective homework - online / paper, etc.

Use comparative method to explore the teaching effectiveness, student learning attitude and feedback response; Show the differences of two teaching methods by the results of questionnaire comparing item by item and cross, merits and demerits gains and losses etc. At present we have completed a written questionnaire
survey of the digital course part and the traditional classroom part, filled out by the students who have learned the courses. We observed the time, space, learning attitude, peer cooperation, learning path, and scope of study etc. to make comparison and analysis of the effectiveness.

**Keywords:** digital course, digital course certification, distance course, traditional classroom teaching, Literature and Life.
STEM 融入大學統計教學的學習成效探討

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摘要

本研究旨在探討 STEM 取向的生活情境統計教學內容，將其融入統計學課程後據以探討學生的學習表現。本研究採行動研究法，比較前後兩個不同學年的統計課程，探討融入 STEM 取向生活情境統計內容與否，其在隨機變數(random variable)相關概念單元的學習成效。研究結果顯示，接受 STEM 取向生活情境統教材的學生，在大部分隨機變數解題表現均顯著較佳。本研究結果顯示，將有意義的生活情境統計內容融入教學，有助於學生的統計學習成效。最後，根據研究結果，本研究提出統計教育的實務和未來研究相關建議。

關鍵字：統計教育、生活統計、STEM
Integration of STEM and University Statistics Education with Investigation on Its Effects

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Abstract

The purpose of this study was to investigate the effects in terms of the integration of STEM (science, technology, engineering, mathematics) and life statistics in university statistics education. This study adopted action research and compare two curriculum design and instruction. One is traditional instruction design and the other was integration of STEM and life statistics. The curriculum topic was “Random Variable”. Results shows that integration of STEM and life statistics would significantly promote conceptual knowledge and problem solving with respect to random variable. Finally, based on the findings, some recommendation and suggestions for future research and practical instruction were discussed.

Keywords: Statistics Education, Life Statistics, STEM
摘要

設計思考(Design Thinking)方法論的精神，主要是透過收斂與發散的過程，協助設計者，突破過去的思維，並以人民為本，以問題為核心，獲得創新的解決方案。其主要的執行步驟包括探索問題(Discover)、定義問題(Define)、發展解決方案(Develop)、以及方案交付(Deliver)等四個主要階段，因此也被稱之為雙鑽石模型(Double Diamond Model)或四D模型。此一概念，對應到資訊系統開發的過程，探索問題與定義問題，屬於思考專題的方向與主題，而發展解決方案與交付則是屬於系統開發與測試驗收的階段。因此，如何將兩者結合，做為帶領資訊管理系同學完成實務專題製作的架構，將能夠同時訓練同學，以問題解決導向為本，結合資訊科技的應用，發展出合適的解決方案。因此，本文主要的目的便是藉由個案的分享，說明如何透過競賽－「第四屆瑪利MAMA盃『心智障礙應用APP』校園創意競賽」，並運用設計思考於資訊管理實務專題教學之中，以提供做為讀者的參考。本競賽共六位同學全程參與，從場域觀察(瑪利亞基金會－愛心家園)、定義使用者需求(透過APP的輔助克服搭公車的障礙)，提出解決方案(行動有愛84無礙)，最後完成系統雛型開發並獲得競賽第一名。過程中，透過設計思考的方法論結合資訊系統開發方法論，進行實務專題製作，藉此學生學會如何以人民為本，針對使用者真正的問題，去滿足其需求，進而提高學習成效。

關鍵詞：設計思考、資訊管理、實務專題、教學個案
Integrate design thinking and information system (IS) development in practical IS project course: A case experience

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Abstract

The spirit of design thinking is employing the process of convergent and divergence to help designer breaking traditional thinking. It is a kind of people and problem oriented method to have innovativeness solution. It consists of four major 4D steps, includes discover, define, develop, and deliver. It also entitled double diamond model or four D model. This four steps can be mapped to the process of information systems development. Therefore, how to integrate the above two methodologies for training students of the department of information management to have the problem-solving ability is an important issue. The purpose of this paper attempts to share a real case to achieve the above goal. By participated App development project competition which organized by Maria Social Welfare Foundation in the practical information systems project course. Six students followed the steps of integrating design thinking and system development process to develop an APP for supporting disabled people to take public city bus on their own. Finally, they won the first award in this competition. This paper shares this experience to demonstrate the integration of service and information system design to deal with the real requirements from the potential users and increase learning effectiveness.

Keywords: design thinking, information system development, practical project, Case study
自編英文單字 App 對大學生自主學習之學習動機與學習成效探討

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摘要

研究背景

2017年6月2日未來Family提出了「看見未來教育21種教室新樣貌」，其中提到隨著人工智慧(AI)時代來臨，如何讓學生做好準備面對未來的世界？因此，如何創造新的學習環境與透過課程及教學的革新，讓教學現場成為師生互動佳、學習氣氛愉快，並且結合科技於教學，使學生對於真實情況有體驗，而非紙上談兵，進而讓學生成為對學習有熱情的人，至為重要。此外，每位同學是獨立的個體，有不同的學習步調，如何能夠促進學生「適性學習」並進而達成「自主學習」，甚為重要。有鑑於此，研究者提議可以經由「應用科技-英語自主學習」進行研究，並且依照大一英文課程進度內容，設計出上下學期各12回的英文單字App，學生首先依照課程進度進入App預習單字，並且做練習題，如果答錯，系統會出現新視窗，將同學引導至VoiceTube網站進行看影片學單字的活動，讓同學在多媒體的氛圍中，進行自主學習活動。

研究目的

隨著科技創新，教學方式也需要與時俱進來引發學生的學習動機，如何營造有利學生的學習環境，誘發其學習動機，至為重要。而創新技術的應用，可以提供新資訊。其中，以行動科技輔助語言學習提供了一個與傳統學習不同的情境與介面，透過使用行動載具應用程式(App)學習，學生的掌控感、思考能力、問題解決能力等，都可以提升。此外，學生可依照自己的學習步調，操作App，針對不熟悉的字彙，可以看影片學習單字，不受時間和空間的限制。

研究方法

本研究目的在於了解「使用自編英語字彙App對大一學生自主學習之學習動機與學習成效之影響」，包含學生使用App搭配VoiceTube影片的學習動機與其使用習慣和學生成效。研究對象
為中部某私立大學一年級修習大一英文的兩個班級學生為研究樣本（N=68）。並用準實驗設計(quasi-experimental design)中「不等組前後測」，採實驗組與對照組方式進行。研究者操弄的自變項為「英語字彙 App」，將對象分成：接受「使用手機應用程式學習英語字彙」的實驗組；與「傳統紙本英文字彙學習法」的對照組。另外，兩班的授課教師、進度、課後複習測驗、期中期末考試均相同。此外，研究者建置了後端資料庫，蒐集學生的使用習慣，了解其英語字彙學習困難及優勢，以便於在課堂中及時講解英文字彙。

結論
透過程本次研究，初步獲得了以下結論：

1. 在 App 英語字彙使用習慣方面，越接近期中考試與期末考試，學生使用英文單字 App 的頻率越高。由此推斷，台灣學生的學習動機還是受到考試因素影響較大。

2. 在 App 英語字彙單元瀏覽次數方面，學生在第一回與第七回的瀏覽次數最高；然而，107 學年度第一學期的授課進度是 1-12 回，由後端資料庫的資料顯示，即使第二學期尚未開始，13 回至 24 回也有同學自主登入系統學習，顯見學生的自主學習動機提升。

3. 在 App 英語字彙點擊頻率方面，同學進入系統後，針對未精熟的單字，可以點選例句，查看單字的使用方式；而結果顯示，單字 App 的第一單元的點擊頻率最高，其餘單元的點擊次數較為平均，因此可以推論，同學在載入 App 時，對於系統較為好奇，造成點擊頻率高的現象。

4. 在英文單字成績表現方面，A 班為實驗組，使用英文單字 App 學習字彙；B 班為對照組，接受傳統課堂講授方式學習字彙，其前測成績並未達顯著差異(p=.228>.05)，固可推論 A、B 兩班之英文單字能力在實驗前並無顯著差異。經過一學期的實驗後，兩班之英文單字後測成績，經使用單因子變異數分析，得到 F 值為 10.958，p 值=.002<.05，達到顯著差異，因此可以推論，實驗組同學(A 班)在使用英文單字 App 之後，其英文單字的學習成效優於接受傳統講授模式的對照組同學(B 班)。

關鍵詞：App、自主學習、學習動機
A Study on College Students’ Self-regulated Learning Motivation and Learning Effectiveness through Self-developed English Vocabulary App

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Abstract

Research Background
The idea of “How to let students be prepared for advent of an era of artificial intelligence (AI)” was proposed in the article of Future Family on June 2nd, 2017. It is important to create a new learning environment, which is not only interactive and delighted, but also uses technology in teaching. Then students can have real-life experience instead of just learning from the textbook. Gradually, students will increase their passion in learning. In addition, each student has his own learning path, and it is also important to promote students’ adaptive learning and self-regulated learning. Therefore, the research focuses on applying compiled English vocabulary App with the help of VoiceTube, an online English video learning platform, on university students as homework and practice in order to cultivate their English self-regulated learning ability, improve their learning motivation, and enhance the evidence of learning outcome.

Research purpose
While the society develops, scientific technology improves, people are gradually adapting the information society, and computer software technology has made a huge impact in our daily life. As computer technology applies to real cases in all different fields, it becomes an indispensable part of our living, and as software are constantly invented and developed, it can be fully used in different disciplines. Through App learning, students are able to enhance their critical thinking ability and problem-solving ability. Moreover, students can review the words or videos based on their own learning path.

Research method
The research’s subjects were students who took the course “Freshman English” from a private university of central Taiwan. Divided into two classes (N=68), the students were taught by the same teacher. According to English level testing, the research subjects were students from the Business Department with beginner level, equivalent to CEF A2 level. The project applied the NGSL (New General Service List) App that provided a list of vocabulary for learning for the Freshman English course. The App has 12 units of vocabulary per semester with an after-learning test for each unit (presuming to have 24 tests for the whole school year). If students have the wrong answer of a certain question, they can watch the VoiceTube’s clip of the researcher’s
choice as a self-regulated learning phase. The researcher distinguished the two Freshman English classes as the experimental group (N=34) which received the “using mobile application to learn English vocabulary” and watched VoiceTube videos for remedial teaching and self-regulated learning, and the control group (N=34) which received “using paper text to learn English vocabulary.” The research applied the two different teaching methods simultaneously of Freshman English course through the school year, and set up a pre-examination of both NGSL vocabulary and English learning motivation scaling form for the two groups. After the study, students did post-examination of both NGSL vocabulary and English learning motivation scaling form. During the research, the teacher used Firebase to recorded students’ usage of the App, and interviewed students from both groups.

Conclusions

Through the study, the conclusions can be summarized as follows:

1. In terms of App usage, when the mid-term and final exam were approaching, the higher the frequency with which students used the App. It is concluded that the motivation of Taiwanese students is still greatly influenced by the test factors.

2. In the number of views of the App unit, the number of views in the first and seventh units of the students got the highest. The progress of the first semester was targeted units 1-12, and even the second semester had not yet begun, there were students logged into the App to preview units 13 to 24. Hence, it showed that students’ self-learning motivation is improved.

3. The first unit of the App had the highest click frequency, and the rest of the units had a relatively average number of clicks. Therefore, it can be inferred that when the students loaded the app, they were curious about the App, and caused a high click frequency.

4. As for the English vocabulary performance, the experimental group performed better than the control group because the two group’s scores were significantly different ($p=.002<.05$).

**Keywords:** App, self-regulated learning, learning motivation
青出於藍—染織繡工藝人才培育教學策略探討

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摘要

臺灣染織繡工藝具有多元文化的豐富性與地域特色，臺灣還曾有「紡織王國」的美譽，呈現出台灣具備豐沛的染織繡文化力與產業潛力。近年來政府致力於推動文化創意產業，工藝產業被列為重點項目之一，工藝對於國家文化資產保存工作的重要性不言而喻。然而，臺灣青少年對於自身染織繡工藝的技術與文化理解都有所不足，老師藝亦逐漸凋零，染織繡工藝正面臨傳承危機。因此，染織繡工藝的人才培育是刻不容緩的文化保存工作。過去針對染織繡工藝所開設的課程少見，且以教師講授為主，或安排部分技藝實作與參訪教學；然而學生們針對染織繡工藝的應用能力仍有所不足，尤其缺乏對於染織繡工藝的觀察、省思與轉化能力，學習成果有限。

本文的目的即在探討染織繡文化與技藝人才培育的新興教學策略。以中部某一科技大學大學部在校生68人为研究對象，並採用行動研究法(Active Research Method)來進行教育實踐計畫研究。課程內容涵蓋美感、知識、技能三個面向。資料收集是針對學生學習檔案(learning portfolio)、筆記、簡短個案紀錄、問卷調查等方式來進行分析。課程運用翻轉教室的教學新策略，以彈性環境(Flexible environment)、學習文化(learning culture)、翻轉內容(intentional content)以及專業教師(professional education)，運用主題基礎或問題基礎導向(PBL)來進行體驗式學習，並將所學的染織繡技能傳授給社區學童。

研究發現：1.運用翻轉教學培育科大生，能強化其染織繡工藝之學習效果 2.透過校外教學與問題基礎導向學習，協助科大生了解產業的生態環境，能提高其未來從事染織繡相關產業的意願。3.邀請業師協同教學，有助於科大生的專業學習，並能體會其所傳遞的頂真精神。4.引導科大生將所學的染織繡技能傳授給社區學童，不僅能強化自身的染織繡技術，且能具體反思染織繡工藝傳習所面臨的困境。臺灣染織繡工藝課程有助於發掘臺灣工藝產業與服飾產業的欣賞者與潛在消費者，並解決資深藝術師與年輕世代的染織繡文化保存與傳承困境，是值得落實與延續的人才培育策略。

關鍵詞：染織繡工藝、人才培育、問題導向學習、翻轉教室、工藝教學
A Study on the Teaching Strategies of Traditional Fiber Crafts

Cultivation

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Abstract

Taiwan's traditional fiber craftsmanship has rich cultural richness and regional characteristics, and has the cultural strength and industrial potential of dyeing, weaving and embroidery. In recent years, the government has committed to promoting the cultural and creative industries. The craft industry has been listed as one of the key projects. The importance of craftsmanship for the preservation of national cultural heritage is prominent. However, Taiwanese adolescents have a lack of technical and cultural understanding of their own dyeing and weaving techniques, and the teacher's art has gradually withered and led to the crisis of inheritance. Therefore, the cultivation of talents in the traditional craft arts is an urgent cultural preservation work. In the past, the courses for dyeing, embroidery and weaving crafts were rare, and teachers were mainly lectured; therefore, students still lacked the application skills of dyeing, embroidery and weaving, especially the ability to observe, think and transform.

The purpose of this paper is to explore the emerging teaching strategies of dyeing, embroidery, and weaving, included culture and the cultivation of skilled talents. A total of 68 students from a university in central Taiwan were selected, and the Action Research Method was used to conduct educational practice research. The course covers three aspects of aesthetics, knowledge and skills. Data collection is based on student learning portfolios, notes, short case records, and questionnaires. The course uses a new teaching strategy for flipping classrooms, using a flexible environment, learning culture, intentional content, and professional education, using subject-based or problem-based orientation (PBL). Experiential learning and imparting the skills of dyeing and weaving to the community students.

The research found that: 1. using the flip teaching to cultivate the students, it can strengthen the learning effect of the dyeing, embroidery, and weaving crafts. 2. through the off-campus teaching and problem-based learning, help the students to understand the ecological environment of the industry, and improve their future dyeing and weaving related industries. 3. invite teachers to coordinate teaching, which will help the majors to learn professionally. 4. guide students to pass on the skills of dyeing, embroidery and weaving to K7-K12.
students, could strengthen their own dyeing and weaving techniques. The training course helps to explore the appreciation and potential consumers of Taiwan's craft industry and apparel industry, and solves the predicament of the preservation and inheritance of the dyeing, weaving and embroidery culture of senior artists and younger generations. It is a talent cultivation strategy worthy of implementation and continuity.

**Keywords:** traditional fiber crafts, talent cultivation, problem-oriented learning, flipping classroom, technology teaching
運用問題導向學習於行銷專業課程之研究

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摘要

行銷管理為企管系重要的五管領域之一，由於行銷活動的多元彈性與高度互動，吸引了許多管理學院的學生修習相關課程；在投入就業市場時，也有很高比例的社會新鮮人希望選擇行銷企劃類的工作。傳統的課堂講授及個案教學法在學生學習基礎理論時，有其成效，但如何讓學生正確運用專業知識外，具備主動學習的能力，以應付未來產業的變化，問題導向學習或許是可以運用的教學方式。因此本研究希望透過教師教學研究來探討問題導向學習的教學模式在行銷領域專業課程的實施歷程，規劃可行的教學方案，了解學生學習成效。

本研究以某國立科技大學 107 學年度修習企管系大學部四年級國際行銷課程的 39 位同學為研究對象，進行三週共九節課的教學研究。利用行動研究方法，透過課堂觀察、教學紀錄表、蒐集學生學習文件、學生自評報告做為研究資料，以多重資料來源進行分析、歸納與驗證。

本研究結果彙整如下:
1. 運用問題導向學習時，由於在校學生缺乏對產業的認識與了解，若是僅以傳統文字、劇幕式的情境描述個案主角遇到的問題，有時候不容易引導學生思考決策的方向以及做決策所需的佐證資料，因此若以影片作為情境問題，會更容易引起學生的興趣，提升學習成效。課程中由業界專家現身說法、帶領討論，也有助於提升學生的學習動機；在課程討論後透過業界專家的意見回饋，能加深學生的印象，強化學生對自我學習成效的信心。

2. 介紹行銷的分析工具或理論時，可以先讓學生應用自己為理論架構分析之主角，此舉有助於吸引學生對研究工具做進一步了解，也能加強對該理論、分析架構的記憶。後續再以企業案例要求學生應用時，能看見學生更能掌握該理論的精髓，減少傳統講授式教學時，許多學生學過就忘、或是在實際應用時錯誤運用理論架構的狀況。

3. 問題導向式的學習有助於學生的主動學習，也確實提高學生解決問題、團隊合作的能力。學生對於此種教學方式以及自我的學習成效均有高度正面的評價。

關鍵詞：問題導向學習、行銷管理、行動研究
A Research on Problem-Based Learning in the Marketing Course

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Abstract

The traditional lecture and case study method is useful to help students learning fundamental theories and core knowledge. But how to encourage students learn actively and have the ability to solve problems and changes? Problem-Based learning (PBL) may be the effective teaching method. In this research, researcher tries to explore the implementation process in a marketing course, and adopt the findings to design the class plan and investigate students’ learning performance.

This research carried out in 2018, and spend three weeks (nine hours) to implement the PBL method. Total 39 students who take the course of global marketing in National XX University of Science and Technology are our research subjective. Using action research, the researcher collect data through class observation, teaching records, students’ learning documents and self-evaluations. To analyze and induct findings according triangulation.

The results are as follows:

1. The students are lack of industrial knowledge, and the traditional repertoire or text description may be difficult to attract students, and not easy to induce them to think the core of decision scenarios. So the students may not understand what kind of information they need, and what framework they should adopt. If the lecturer adopts short film as a situational question, it will be much easier to increase their motivation and increase the learning performance. When we invite the practitioner or expert to join the class, because of their experience and feedback, students may understand the reality more. Students will have stronger impression about what they learned and strengthen their confidence.

2. Take students themselves as the subjects to apply marketing framework or theory will increase their interest to learn and improve learning effectiveness. When we ask them to adopt the framework to analyze real business case, they will retrieve it more easily and make less error.

3. Problem-Based Learning method is helpful for active learning. This method also increase students’ problem-solving ability and team-work ability. All the students in this class evaluate themselves having high learning effectiveness and highly degree PBL is an effective teaching method.

Key words: Problem-Based Learning (PBL), Marketing, Action Research
Education Without Borders: Foreign students’ multicultural learning experience
Culture shock and cross cultural adaptability: Learning experience of International students in Taiwan. A case study of National Yunlin University of Science and Technology (YunTech)

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Abstract

With globalization and technological advancements, the world has become boundless “global village” influencing facets of all sectors in both industrialized and less industrialized economies. Education is one sector of an example. Education mobility has become a common phenomenon due to global competition, demand for human resource development, information and technology sharing among people, firms and nations. Taiwan has become an ideal study destination due to its remarkable efforts to transform as an academic hub in Asia. Taiwan’s education system and technology levels has attracted an influx of international students around the world finding their academic destinies in this island. However, every good thing comes with its challenge; “culture shock challenge” of international student assumes this view. Applying qualitative thematic review of literature, this paper sought to understand culture shock among international students and their adaptability strategies while in Taiwan taking YunTech University as the case study. The thematic review results indicate: communication barrier, difference in nonverbal communication interpretation, limited cross cultural interaction as common culture shocks among international students. Personal perception, support from other foreign students, religious activities (prayers), mentorship relations and campus services were some adaptability strategies however, culture shock is a series of stage in personal acculturation in the new environment.

Keywords: International students, culture shock, cross culture adaptability, learning experience, universities, studying abroad.
My experience doing a master’s degree in Taiwan

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Abstract

This presentation aims to describe the experience of a Dominican student studying abroad at Yuntech university in Taiwan, including the reasons that motivated him to choose to come to Taiwan and not go to another country, in the same way the reasons that led him to come to this prestigious university. In this presentation we will learn some facts about the Dominican culture, about this student’s educational background and how was his adaptation process to the Taiwanese culture and Taiwanese education system. Through this presentation we will realize how much his life has changed throughout these last two years, and how satisfied he is with the decision of coming to study at this university, and to this country.

Key words: Culture, adaptation process.
A Study on the cultural adjustment of Indonesian International students in Taiwan

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Abstract

The study purported to investigate the cultural adjustment experiences of Indonesian international students in Taiwan using grounded theory methods. Five Indonesian students who study at National Yunlin University of Science and Technology and has been in Yunlin for 2-3 years were interviewed. The response from participants was classified into the following themes: expectations about Taiwan versus the reality, acculturative stress or cultural adjustment, cultural differences between Indonesia and Taiwan, experiences of discrimination or curiosity, language proficiency, relationships, social support and help-seeking behaviour, and being an Indonesian student in Taiwan. The results of the study showed that the first 3-6 months were the most challenging period for international students, namely the initial period entered a new cultural context. This is most influenced by expectations that come from previous cultural and educational experiences. The adjustment of the students was affected by their proficiency in the Chinese language, cultural differences, high capability to accept diversity, and more freedom and decision-making opportunities. They become more open-minded, egalitarian, having flexibility in facing problems during their study. This study also suggests that International students need to make some preparations before departure.

Key words: International student, cultural adjustment, diversity,
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