

培育終身的
創造力



創2008 造力教育

國際學術研討會

2008 International Conference
on Creativity Education

南部場次會議手冊

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時間	10/23 (中山)					
0840~0900	報 到					
0900 0910	開 幕 典 禮 貴賓致詞					
0910 1040	主題演講：Wise Creativity and Creative Wisdom: Artful Living in Education 主講人：Hans Henrik Knoop 主持人：學術交流基金會 吳靜吉 執行長 地點：圖資大樓 11F 大會議廳					
1040~1100	茶 敘					
1100 1230	論 文 發 表					專 題
	場次	A-1	A-2	A-3	A-4	A-5
	主 題	科學	高中科技	藝術	國小幼兒	性理大學的興學宗旨
	發 表 人	①侯雅齡 ②陳雅惠 ③蔡宜穎	①張美珍 ②張馨方 ③張毓禎 ④易曉雯	①楊淑菁 ②章佩玉	①陳致豪 ②曾永美 ③陳佳萍	發表人楊冀華 與談人 張宏仁/南科大歷史 所教授 謝成忠/谷風出版社 社長兼董事長
主 持 地 點	中山大學資管系 鄭炳強教授 圖資11F R1111	中山大學財管系 徐守德教授 圖資11F R1110	中山大學企管系 高明瑞教授 圖資11F R1109	中山大學教育所 洪瑞兒教授 圖資11F R1108	楊冀華 圖資11F R1107	
1230~1330	午 餐					
1330 1500	論 文 發 表					工 作 坊
	場次	B-1	B-2	B-3	B-4	B-5
	主 題	科學	行動研究	藝術	國小幼兒	主題： Creative Problem Solving: Principles and Procedures for Enhancing Creative Thinking
	發 表 人	①顧雅利 ②柯依姘 ③熊同鑫	①陳玉樺 ②蔡其蓁 ③陳玉燕	①吳易軒 ②陳佳秀	①陳紹蓁 ②唐子騏等 ③Yu-sien Li	
主 持 地 點	中山大學企管系 黃北豪教授 圖資11F R1111	中山大學教育所 邱文彬教授 圖資11F R1110	中山大學政經系 張其祿教授 圖資11F R1109	中山大學政經系 李予綱教授 圖資11F R1108		
1500~1530	茶 敘					
1530 1700	論 文 發 表			多 媒 體 發 表		主 講 人： Gerard J. Puccio 學術交流基金會 吳靜吉 執行長 圖資11F R1107
	場次		C-2	C-3	C-1	
	主 題		創意成效評估	國小幼兒	台灣中小學的創意教師 群像紀錄	
	發 表 人		①蔡秉恆 ②王映人 ③劉昆夏	①阮志偉 ②郭玉津 ③林小玉	與談人： 李淑君製片 簡雅君導演 簡盈安助理	
主 持 地 點		中山大學企管系 方至民教授 圖資11F R1110	中山大學電機系 郭志文教授 圖資11F R1109	清華大學師資培育中心 鍾文宏教授 圖資11F R1106		
1700	第 一 天 研 討 會 結 束					

時間	10/24 (中山)					
0840~0900	報 到					
0900 1030	主題演講：One Hundred Years of Creativity Research: What We Know and What We Need to Know 主講人：Jonathan Alan Plucker 主持人：中山大學人管所 陳以亨教授 地點：圖資大樓 11F 大會議廳					
1030~1100	茶 敘					
1100 1230	論 文 發 表					
	場次	D-1	D-2	D-3	D-4	D-5
	主題	班級與學校經營	成人	國小幼兒	創意概論與其他	英文
	發表人	①郭信宏 ②連俊智 ③王乙婷等 ④陳秋菊	①樊學良 ②林杏子 ③蕭佳純 ④白雲霞	①楊茹美 ②張淑玲 ③鄭博真等 ④林純宇	①王光燦 ②劉勝驥 ③林子仙 ④李偉俊	①Ka Yee Man ②Pasl A. Jalil等 ③Norio
	主持	中山大學企管系 趙平宜教授	中山大學財管系 張玉山教授	中山大學 通識中心講座教 授林煥祥教授	中山大學企管系 李清潭教授	中山大學人管所 趙必孝教授
地點	圖資11F R1111	圖資11F R1110	圖資11F R1109	圖資11F R1108	圖資11F R1107	
1230~1330	午 餐					
1330 1500	論 文 發 表					工作坊
	場次	E-1	E-2	E-3	E-4	E-5
	主題	設計	大學課程	創意概論與其他	英文	
	發表人	①尤宏章 ②羅玲玲等 ③王靖雅 ④梁俊仁	①張靜琪 ②李藹慈 ③溫澄雅 ④林裕仁	①黃揚婷等 ②吳雅萍 ③卓英潔	①Lloyd H. Barrow ②Ka Yee Man ③Gunseli	主題： How to Design a Creative Learning Environment
	主持	中正大學 黃良志教授	中山大學企管系 李清潭教授	中山大學資管系 林信惠教授	中山大學企管系 黃賀教授	
地點	圖資11F R1111	圖資11F R1110	圖資11F R1109	圖資11F R1108		
1500~1530	茶 敘					
1530 1700	論文發表					主講人：
	場次	F-1	F-2			Hans Henrik Knoop
	主題	創意概論與其他	創意學院			
	發表人	①耿志堅 ②鄧佳茜等 ③蘇雅慧 ④于森等	政治大學 台東大學			國立台北教育大學 國民教育林偉文教 授
	主持	中山大學資管系 梁定澎教授	兩校共同主持			
地點	圖資11F R1111	圖資11F R1108			圖資11F R1107	
17:00 17:30	南 區 閉 幕 典 禮					

2008創造力教育國際學術研討會
高雄場發表一覽表

主題	場次	發表人/作者	發表題目	頁碼
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		蔡宜穎	科學遊戲教學對幼兒圖形創造力影響之研究	A-5
高中科技	A-2	張美珍	高中生參與科技創作競賽之創意設計歷程分析	A-7
		張馨方	國中教師激發學生創意參與科展之歷程探析	A-9
		張毓禎	小組合作課程及訓練激發學生科學創造力與競爭力	A-11
		易曉雯	如何利用科學創意競賽提升自然科的教學成效	A-13
藝術	A-3	楊淑菁	舞蹈的創作的創造力	A-15
		章佩玉	創意藝術人文教學之分享	A-17
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		曾永美	我是創意料理王-以國小四年級學生創意學習與創作為例	A-21
		陳佳萍	培育體驗學習的創造力--一所國民小學創造力教育行動的實踐與省思	A-23
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		柯依玟	亞斯柏格學生科技創造力之研究	B-3
		熊同鑫	融入原住民文化之創意科學教育輔具探究	B-5
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		Yu-sien Li	用教育性戲劇培養創造力--探討戲劇與創造力教學的關係 Fostering Children's Creativity through Drama in Education-- the creative pedagogy in drama in education	B-21
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		王映人	以創意積木激發大學生創造力之教學模式建構與教學成效初探	C-3
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		王乙婷、李佳憶	推動創造力教育結合學校本位課程的落實 提升學校效能效果之研究	D-5
		陳秋菊	通識教育援引大學教學卓越計畫 資源的藝術創作教學--以屏東科技大學藝術鑑賞課程 為例	D-7
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		王靖雅	以創意問題解決活動為導向探討室內設計學生設計創造力之養成	E-5
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		李譔慈	創意教學設計與大學生生涯決策自我效能之發展	E-11
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特邀學者簡介

Introduction of the Keynote Speakers and Workshop Leaders

- **Knoop, Hans Henrik**
- **Lau Sing , 劉誠**
- **Lubart, Todd**
- **Plucker, Jonathan A.**
- **Puccio, Gerard J.**
- **Simonton, Dean Keith**

(in alphabetical order)



Hans Henrik Knoop

Associate Professor of Psychology,
University of Aarhus and Director of
the Universe Research Lab

Hans Henrik Knoop is Associate Professor of Psychology at the School of Education, University of Aarhus, Denmark & Director, and Principal Investigator at the Universe Research Lab – an international research centre focused on collecting, producing and conveying knowledge about learning, creativity, education and innovation. Among others, Universe Research Lab is supported by the Nordea Denmark Foundation, the Bitten & Mads Clausen Foundation and the Egmont Foundation with a budget of approx 5 Mio Euro for the period 2007-2012, and with professor Howard Gardner, Harvard University, and professor Svein Sjøberg, Oslo University, on the Board.

In the past 10 years Hans Henrik Knoop has been involved in research cooperation with colleagues at Harvard University, Stanford University and at Claremont Graduate University in the GoodWork® Project and as researcher he has participated in development projects for LEGO (1998-2004), Danfoss Universe (2005-), SIS Akademi (2004-) and Royal Greenland Academy (2006), among others. In 2006-2007 contributed to the Danish DR2's programs on talent development in schools, and he was the scholarly anchor of the Danish TV2's reality documentary series "Plan B" concerning efficient education – a program that received international attention in being nominated for the highly prestigious television Golden Rose of Montreux in 2007. Other recent media appearances are here.

As academic expert he has contributed to Danish ministerial committees on cross-curricular competencies (2000-2001), pedagogical appliance of IT (2002-2003), pedagogical planning (2004-2005), talent development (2005), the Government's

Committee on School Initiation (2005-2006) and the Danish Evaluation Institute's project concerning teaching environment in primary and secondary school (2006).
Hans Henrik Knoop is a member of the Board of Directors of the International Positive Psychology Association (IPPA) (2007-).

He has carried out research based consultancy for a large number of institutions and municipalities in Denmark (1994-) and internationally he has been involved in major EU-financed development projects in Latvia (1993-) and Lithuania (1995-1998) as well as contributing to evaluation of development projects for EU (1997-1998).

Hans Henrik Knoop is a requested speaker, who has presented his work through more than 800 invited keynotes and lectures in Denmark and at conferences in many countries.

現任：丹麥奧胡斯大學教育心理學系副教授
University of Aarhus

簡介：Dr. Knoop 為丹麥著名學者，專擅研究工作心理學、心流經驗、創造力、玩興與自我組織等議題，尤其對於心流經驗的研究成果，受到創造力大師 Csikszentmihalyi, M. 的高度肯定，在丹麥的作品及工作坊課程都極受歡迎。



LAU Sing , 劉誠

Chair Professor, Department of
Education Studies, HKBU

Director, Center for Child
Development, HKBU

Professional Membership

- American Psychological Association
- Asia-Pacific Federation of the World Council for Gifted and Talented Children
- Hong Kong Educational Research Association
- International Association of Cross-Cultural Psychology
- International Council of Psychologists

Honors and Awards

- Recipient of the University Staff Research Fellowship of Hong Kong Baptist University to carry out research at the Office on Child Development of University of Pittsburgh in 1995.
- Recipient of the C.Y. Kwan Fellowships of Chinese University of Hong Kong to carry out research at State University of New York in 1984 and at Purdue University in 1987.
- Recipient of 54 research grants to carry out research on the psychological development of adolescents and children since 1980. (Please refer to the section on "Scholarly/Research-related Activities" for the listing of research grants.)

AREAS OF RESEARCH INTEREST

- Creativity, Gifted education
- Child and adolescent development: self-concept, gender role, value, parenting style, motivation, suicide

- Cross-cultural study of Chinese personality and behavior

Research in Progress

- Advanced Course on Educating the Gifted Students I – Teacher Training Programme on Educating Gifted Students on Leadership, Creativity and Critical Thinking
- Formulation of policy and strategy in developing creativity education in Hong Kong schools: A practitioner's perspective
- Research and Development of Drama in Education Projects
- The incubation model of creative teaching and learning in languages for gifted, average, and special learners.
- Advanced Courses on Educating the Gifted Students
- The relationship of physical education training to psychosocial development of secondary school students
- An International Study of Creativity Assessment of Children in Hong Kong and Paris in Cross-Cultural Education Context
- Norming study of Multi-perspective Multi-domain Self-concept Inventory Scale
- Evaluation Services for the Effectiveness of Structured Whole Person Development Program

現任：香港浸會大學 教育系教授暨兒童發展中心主任

簡介：香港地區研究創造力的最具代表性人物之一，除了瞭解西方理論之外，也熟悉兩岸三地的創造力研究與實務，曾於 2001 年主辦以「Creativity: When east meets west」為主題的 international symposium，會後並出版專書。他對於創造力的研究特色在於社會心理、發展心理和文化比較等觀點。



Todd Lubart

Professor

University of Paris V

Laboratoire Cognition et

Développement - CNRS

(UMR-8605)

Institut de Psychologie -

Université René Descartes

(Paris 5)

EDUCATION

PhD, Psychology, Yale University, 1994

Habilitation à Diriger des Recherches, Psychology, University René Descartes Paris V, 2000

TEACHING EXPERIENCE

Undergraduate: Introduction to psychology, Differential psychology , Creativity, Cognitive psychology , Social psychology

Master: Intelligence and creativity, Personality and cognitive styles, Mental representation, Differential psychology in the social world

Doctoral level: Practical Intelligence

Direction of student's research since 1995:

Master (1st year project): 31 students, Master (2nd year project): 15 students

PhD: 3 dissertations completed (social creativity and it's development, emotion and creativity, cognitive flexibility) ; 4 students in progress (giftedness and high ability, creativity and technology)

RESEARCH

Responsible of the "cognition and differentiation" research group (8 faculty, 2 technicians, 7 doctoral students, 3 post-docs), in the Laboratory CNRS-Paris 5 , UMR 8605

PROFESSIONAL ACTIVITY

Colloquium on Cognition and Creativity in Organizational Settings (1995, Paris, France). Co-organizer.

International Summer School on “Creativity in the Workplace” (July 2003, University of Paris, France). Organizer.

Colloquium . Creativity in business, creativity in society.. Boulogne-Billancourt, September 2004 , Co-organizer

Consultant concerning creativity for Radio (Radio France), Press (professional magazines, e.g., Entreprise, business settings (e.g. Chanel, ETD--National agency for business development)

Member of the Editorial Board, Creativity and Innovation Management, Guest editor, special issue of. Creativity and Innovation Management ., 2004; Ad Hoc reviews for scientific journals such as: Creativity Research Journal, , European Review of Applied Psychology, Psychological Bulletin, Journal of Creative Behavior, Journal of Personality and Social Behavior, Personality and Social Psychology Bulletin; reviews for research organizations : National Science Foundation” (USA), Dutch Science Foundation , UNESCO.

STAFF MOBILITY

Research visits: University of Buffalo (USA, Center for Creative Studies), University of Yale (USA), University of Sofia (Bulgaria), University of Connecticut (USA), Blackwell Publishing (Oxford, England, Creativity and Innovation Management).

現任： 巴黎 第五大學心理系教授
University of Paris 5.

簡介：Dr. Lubart 曾在 2001 年獲得美國心理學會（APA）頒給傑出年輕學者的柏蘭獎（Berlyne Award），他與 Robert Sternberg 聯手打造「創造力的投資理論」，在心理學界廣為熟知，兩人的共同著作《不同凡想》（洪蘭譯，遠流出版）在台灣亦廣為流傳。Dr. Lubart 獨力完成的法文著作「創意心理學」，是法國一九七四年以來從心理學角度分析創造力的一本最重要的著作，最近也在台灣出版（遠流）。



Jonathan A. Plucker

Professor of Educational Psychology
and Cognitive Science, Indiana
University, Bloomington, IN

PROFESSIONAL EXPERIENCE

- 2007-2009, Board of Education, St. Charles School, Bloomington, Indiana
- 2007, Advisory Committee, Phi Delta Kappa/Gallup Poll of the Public's Attitudes
Toward the Public Schools
- 2004-Present, Director, Center for Evaluation and Education Policy
- 2003, Director, Indiana Education Policy Center, and Interim Director, Indiana Center
for Evaluation, Indiana University
- 1993-1995, Research Assistant, The National Research Center on the Gifted and
Talented, University of Virginia, Charlottesville, VA
- 1992-1993, Teacher, West Point (NY) Elementary and Middle Schools
- 1991-1992, Research Assistant, The National Research Center on the Gifted and
Talented, The University of Connecticut

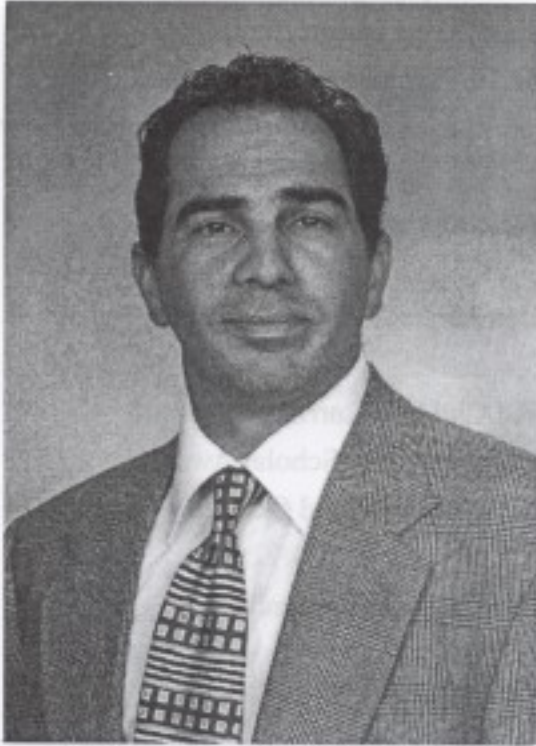
AWARDS AND FELLOWSHIPS

- 2007, November, E. Paul Torrance Award, National Association for Gifted Children
- 2005, March, Teaching and Learning with Technology Grant, IU Teaching &
Learning Technology Centers (Esping, A., & Plucker, J.) to expand intelligence web
site
- 2004, July, Poynter Fellowship on the Ethics of Childhood
- 2003, March, OTRP Instructional Resource Award from The Society for the Teaching
of Psychology (Esping, A., & Plucker, J.) to expand intelligence web site

2001, December, Indiana University SBC Fellowship to develop intelligence web site
2001, March, Robert C. Berlyne Award for outstanding research by a junior scholar,
American Psychological Association Division 10-Psychology & the Arts
2000, September, Scholarship of Learning and Teaching Presentation Award, IU Dean
of Faculties Office
2000, May, Mensa Education & Research Foundation Award for Excellence in
Research
2000, March, Teaching Excellence Recognition Award, Indiana University School of
Education
1998, October, National Association for Gifted Children Curriculum Award
1998, July, National Association for Gifted Children Early Scholar Award
1997, November, NAGC Honorable Mention for Gifted Child Quarterly Paper of the
Year
1997, May, Mensa International Award for Excellence in Research

現任：美國印地安納大學教育心理及諮商學系教授

簡介：Dr. Plucker 曾擔任美國國家天才兒童協會研究和評價部主席，在資優教育、教育政策、創造力等領域素有專長，門薩教育及研究基金獎及 E. Paul Torrance Award 的獲獎都證明了他在學術上的貢獻有目共睹。Dr. Plucker 現為印地安納大學評量及教育政策研究中心（Center for Evaluation and Education Policy）主任，及美國心理學會第十分會會長。短暫的中小學教學經驗，使他在教育政策上的見解更為務實，常常成為政府單位及媒體的諮詢對象。



Gerard J. Puccio

Department Chair,
International Center for Studies in
Creativity, Buffalo State – State
University of New York (SUNY),
Buffalo, New York.

Professor,
International Center for Studies in
Creativity, Buffalo State – SUNY,
Buffalo, New York.

Provided Training Services to:

- 3M
- American Axle and Manufacturing
- American Marketing Association
- BANAS Mortgage
- Bull Worldwide Industries
- Dunlop
- Exxon
- General Motors
- Grand Metropolitan Brewing Plc. (UK)
- H&R Construction Incorporated
- IBM
- International Management Council
- International Masters Publishers
- Procter & Gamble (UK)
- Procter & Gamble (US)
- United Kingdom Atomic Energy Authority

Facilitated Meetings for:

- AT Supply
- AT&T

Bull Worldwide Industries
Corning
Derrick Equipment Company
Engineering Department
Research and Development Department
H&R Construction Incorporated
ICON Direct Marketing
International Masters Publishers
Procter & Gamble (UK)

Leadership & Service in the Field of Creativity

- Advisory Board, Creativity & Innovation Management Journal
- Editorial Board, Creativity & Innovation Management Journal
- Board of Trustees, Creative Education Foundation, 2002-2003
- External Evaluator, Northwood University, Alden B. Dow Creativity Center, Summer Fellowship Program
- Review manuscripts for the Journal of Creative Behavior (ad hoc reviewer)
- External Evaluator, Research Grants Council, University Grants Committee, SAR Government of Hong Kong

Awards

- The State University of New York Chancellor's Recognition Award for Exemplary Contributions in Research and Scholarship, 2005
- State University College at Buffalo, President's Medal for Excellence in Research, Scholarship, and Creativity, 2007
- Jamestown Community College Distinguished Alumnus Award, 2007

現任：美國紐約州立大學 Buffalo 學院 創造力研究國際中心主任
SUNY, Buffalo State College

簡介：Puccio 所領導的「創造力研究國際中心」，歷史非常悠久（since 1967），是國際上最具代表性的創造力研究與推廣機構之一，歷年來已經培育出許多著名學者，培育方式也廣為各界採用。Puccio 本身對於創造力的培育方式深具心得，對於文化差異也具有敏感度，曾於 2001 年應邀參加香港有關「Creativity: When east meets west」的 international symposium，發表創造力培育方式的東西方比較研究成果。



Dean Keith Simonton

Distinguished Professor and
Vice Chair
Department of Psychology
University of California,
Davis

Expertise

Genius, creativity, leadership, and aesthetics - the cognitive, personal, developmental, social, and cultural factors behind eminence, giftedness, and talent in science, philosophy, literature, music, art, cinema, politics, and war.

Archival data analysis - cross-cultural, transhistorical, biographical, and content analytical measures, with special stress on the historiometric analyses of eminent personalities, notable events, and creative products.

History of psychology - including analyses from the standpoint of the psychology of science, especially the psychology of distinguished scientists and eminent psychologists.

Awards and Achievements

Robert S. Daniel Award for Four Year College/University Teaching, Division 2 - Society for the Teaching of Psychology, APA (2006) [photo/citation];

UC Davis Prize for Teaching and Scholarly Achievement (1994);

Distinguished Teaching Award of the Academic Senate of the University of California (Davis Division, 2000);

Magnar Ronning Award for Teaching Excellence, University of California, Davis (Associated Students of UC Davis, 1979);

Fellow, Division 2 - Society for the Teaching of Psychology, APA (1997);

Nominations, U.S. Professor of the Year, Carnegie Foundation for the Advancement of Teaching (1997-1998);

Forum on Exemplary Teaching, American Association for Higher Education (1994);

Endowed Simonton Prize for Excellence in Undergraduate Research bestowed annually at commencement (1995);
Certificate of Appreciation for Outstanding Service as Psi Chi Faculty Advisor, Davis Chapter (1994);
Honorary Member, Golden Key National Honorary Society (1991);
Finalist, Distinguished Teaching Award, Davis Division of the Academic Senate, University of California (1981);
Fellow, Danforth Foundation (1970-1974).

現任：美國加州大學戴維斯分校心理系特聘教授兼副主任
University of California , Davis

簡介：在創造力研究及心理學界， Dr. Simonton 以歷史測量學的研究方法著名，他從時代巨觀的角度分析創造力演化及傑出影響力人士，發表過數百篇作品，研究發現廣為各界所引用。

高雄場

場次 A

KAOHSIUNG

SESSION A

幼兒玩興、家庭環境與科學創造力之相關研究

侯雅齡

國立屏東教育大學副教授

摘要

幼兒的創造力有別於成人，是一種想像的遊玩，但存在著領域(domain)間的差異(Runco, 2006)，因此，本研究乃透過動手作(hands-on)科學課程來瞭解幼兒科學創造力表現；由於遊戲是創造力發展的基礎(Schmukler, 1985)且家庭提供了創造力發展的「養分」，所以本研究之目的乃在於探討幼兒自發性遊戲傾向的玩興特質(playfulness)、家庭環境因素與科學創造力之間的關係。

研究參與者包含 8 所公、私立幼稚園 308 位大班的兒童以及 26 位接受研究者教學與評量訓練後的幼教教師。幼兒科學創造力的評量為一嵌入於動手作科學課程之實作評量，實作評量內容以 5 個動手作物理活動為實作任務，透過檢核表與評分規準來對個人科學創造力加以計分，此一實作評量之類推性理論信度係數為 0.81，有良好的內容效度與建構效度並兼具可行性與實用性。在本研究中，以每週兩次，持續八週的完整評量以瞭解幼兒的科學創造力。玩興測量則採用劉秀娟（1995）翻譯自 Barnett 的兒童玩性量表（Children's Playfulness Scale, CPS），原量表已有不錯的信、效度，但研究者亦重新以驗證性因素分析取得其建構效度證據；家庭環境調查問卷則用以瞭解家庭狀況、資源與功能。資料分析則採用 SPSS15.0 以及 AMOS7.0 軟體進行單因子多變量變異數分析(MANOVA)及結構方程模式(SEM)分析。研究結果顯示幼兒創造力的發展受到家長所左右，在 MANOVA 分析結果：家長學歷、家中圖書設備、家長在選購玩具的科學思考、家中科學活動安排等變項分別在五個幼兒的科學創造力表現（流暢性表現、獨創性表現、變通性表現、敏覺性表現與合作性表現）有顯著差異，進一步的單因子變異數分析及事後比較結果，皆發現家庭環境佳的幼兒其各類創造行為皆顯著優於環境不佳者，解釋力 η^2 則在 4%至 12%之間，以家長學歷、家中圖書設備的解釋力最高。另外，出生序則未有預期的差異呈現。研究者所建構的幼兒玩興特質、家庭社經地位、家庭功能對科學創造力表現之線性結構模式，依 Bagozzi 與 Yi(1988)的適合度評鑑建議，不僅評鑑整體模式適合度也考慮基本適合標準與模式內在結構適合度，評估結果多數符合期待，其中 χ^2 雖拒絕假設模式，但 χ^2 易受樣本波動影響，較不受樣本人數波動的 GFI 為.904，NFI 為.931，IFI 為.951，HOELTER 的樣本數為 217，都有理想的數值。模式中幼兒玩興特質對科學創造表現的標準化徑路係數最高，為.64，家庭社經地位的標準化徑路係數為.20。本研究的完成，不僅培養了可實施幼兒科學創造力實作評量的種子教師，另一方面也對個人玩興、家庭因素與創造力的關係作深入的探討與分析，有助於教師、家長正視幼兒科學創造力，提供適宜潛能發展的學習環境。

關鍵詞：幼兒科學創造力、實作評量、幼兒玩興、結構方程模式

Session: A-1

侯雅齡

No provided

PowerPoint Game 融入國小五年級自然科教學對學生創造力影響之研究

陳雅惠

國立新竹教育大學教育所研究生

王淳民

國立新竹教育大學教育系助理教授

摘要

本研究擬以「PowerPoint Game」融入國小五年級的自然科教學，以了解「PowerPoint Game」的教學方式如何影響學生的創造力，並期望能使教師在教學法上的選擇更加多元化。PowerPoint Game 教學法，是以學生既有的知識為基礎，讓學生主動地學習，透過蒐集資料、整合資料、將零碎的知識經由統整之後來設計一套遊戲。目的在透過這種以學生為本位、教師為輔的方式，讓學生真正成為學習的主角。

本研究採取「準實驗研究法」，透過比較 PowerPoint Game 教學法與傳統教學法對學生在創造力測驗上的表現來瞭解 PowerPoint Game 對學習的影響。在創造力測驗上，本研究採用「新編創造思考測驗」來評估學生的創造力。在研究設計上，以新竹縣某一國小的五年級兩班學生作為研究對象。其中對照組的班級（n=22），維持傳統教學方式；而實驗組（n=22）則以「PowerPoint Game」的方式進行教學。兩班同時為期六週，每週一節，共六節課的教學實驗時間。在資料分析上，以平均數以及標準差來說明實驗組、對照組學生在「新編創造力思考測驗」之前測和後測的得分情形，並使用 t-test 來比較學生在「新編創造思考測驗」之前、後測得分差異。在進行實驗組與對照組的統計分析之後，再分析實驗組與對照組的學生在「新編創造力思考測驗」量表之得分是否達到顯著差異。

本研究主要發現：在語文創造力方面，PowerPoint Game 教學能有效提昇國小學童的語文創造力之「獨創力」、「流暢力」與「變通力」。而在圖形創造力的表現上，PowerPoint Game 教學能有效提昇國小學童的圖形創造力之「流暢力」以及「獨創力」，但在「變通力」與「精進力」兩個層面則沒有顯著差異。

關鍵字：PowerPoint Game、創造力、新編創造力思考測驗

Integrating PowerPoint Game into the fifth-grade science class: The influence on students' creativity

Ya-Hui Chen

Chun-Min Wang

National Hsinchu University of Education

Abstract

By integrating PowerPoint Game into the fifth-grade science class, the purpose of this study is to understand how PowerPoint Game affects students' creativity in order to provide new teaching model for teachers. The new teaching model, PowerPoint Game, allows students to gather and integrate information more actively. Based on the previous knowledge, the students can design their own PowerPoint game and become the truly owner of their learning. This study adopts "quasi-experiment" design to understand the influence of PowerPoint Game on learning by comparing the performance of students in the creativity tests in two different groups of students. For the creativity, this study applied "New Creativity Thinking Test" to evaluate the level of students' creativity. Two classes of fifth-grade students in an elementary school in Hsinchu, Taiwan were selected as the participants in this study. One was the control group (n=22) using the traditional teaching method, and the other one was the experimental group (n=22) using the "PowerPoint Game" teaching model. During the six-week data collection period, the two groups of students received different methods of teaching once a week. By analyzing the scores of the pre-test and post-test of the "New Creativity Thinking Test," the researchers intended to find out if there is any significant difference between the control and experimental groups. The results of the study show that in terms of students' linguistic creativity ability, the PowerPoint Game teaching model can improve students' "originality," "fluency," and "flexibility," but for their graphics creativity ability, the PowerPoint teaching model can only improve their "fluency" and "originality" rather than their ability of "flexibility" and "elaboration."

Keywords: PowerPoint Game · Creativity · New Creativity Thinking Test

科學遊戲對幼兒圖形創造力影響之研究

蔡宜穎
聖文幼稚園教師

陳龍安
實踐大學企業創新與創業管理研究所
家庭教育與兒童發展研究所教授

摘要

本研究依據陳龍安(1989)創造思考教學模式「問想做評」為架構，編擬一套適合幼兒的科學遊戲教學活動方案，經由十二週實驗教學後，探討此方案對於提昇幼兒圖形創造力的成效。

本研究採不等組前後測準實驗研究法，採立意取樣選取高雄市某幼稚園大班幼兒為研究對象。實驗組 30 名幼兒接受十二週的科學遊戲教學方案之活動，控制組 24 名幼兒則接受一般創造思考教學。本研究之研究工具為「新編創造思考圖形測驗」、「陶倫斯創造思考圖形測驗」(乙式)，以單因子共變數分析進行兩組圖形創造力表現差異之比較。研究結果如下：

- 一、實驗組與控制組幼兒在「圖形流暢力」、「圖形變通力」、「圖形獨創力」分數表現差異未達顯著水準，在「圖形精進力」部分則實驗組表現優於控制組，其差異達顯著水準。
- 二、研究者進一步以「效果量」為指標，以評估各組學生創造力前後表現之效果大小，研究結果顯示：實驗組與控制組幼兒兩群後測結果皆顯著優於前測，實驗組幼兒在新編創造思考圖形測驗流暢力、變通力、獨創力、精密利以及陶倫斯圖形測驗的流暢力、獨創力、精密力等七個項目的效果量大於控制組幼兒。

關鍵字：圖形創造力，科學遊戲，創造思考教學

Effects of Play-based Science program on children's Figural creativity

Ms Yi-Ying TSAI

DR. Lung-An CHEN

Abstract

The purpose of this study was based on Dr. Chen (1989) model of ATDE, designed a play-based science program for young children , and investigated the effectiveness of which improving young children's Figural creativity after 12-weeks experiment teaching.

This study was adopted nonequivalent control-group design by quasi-experimental designs. The subjects of this study came from kindergartens in Kaoshiung city and selected by purposive sampling method. Thirty children as an experimental group received a play-based science program for 12 weeks ; Twenty-four children were in control group and receive regular creativity teaching through lecture. The instruments included New Creativity Test and Torrance Tests of Creative Thinking, Figural B (TTCT), and CAP / Williams Scale to collect data. The data were analyzed by one-way ANCOVA and used effect size to evaluate the effectiveness of fluency, flexibility, originality, and elaboration. The results were following:

1. In New Creativity Test and Torrance Tests, the children from experimental group had better performance in "picture elaboration" than control group, and reached statistical significant difference. However, there were no differences among "Figural fluency", "Figural flexibility", and "Figural originality". In effect size of creativity, experimental group had higher effect size than control group in every item (fluency, flexibility, originality, and elaboration).
2. In Torrance Tests of Creative Thinking, Figural B (TTCT), the children from experimental group performed better in "Figural elaboration" than control group, and reached statistical significant difference. There were no differences among "Figural fluency", "Figural flexibility", and "Figural originality". In effect size of creativity, experimental group had higher effect size than control group in "Figural fluency", "Figural originality", and "Figural elaboration".

Finally, the result of this study can be taken as reference for kindergarten teachers, parents, norm instrument designed, and future researches.

Key word: Figural creativity , play-based science, creativity teaching ,ATDE Model

高中生參與科技創作競賽之創意設計歷程分析

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摘要

高中生參與科技創作競賽活動於近年來有逐漸增加的趨勢，除了政策面上的積極推動，如教育部的創造力教育白皮書的公布，還有高中生多元入學管道較為暢通等因素，使得學生們更樂於參與創作競賽。同時專為高中生舉辦的創意競賽也有逐年增加之勢，「高中生高溫超導磁浮創意競賽」是其中較受學生歡迎的競賽之一。本研究以第五屆全國高中生高溫超導磁浮創意競賽的 11 個得獎團隊為研究對象，主要目的在於探究高中生創作設計歷程的特性，並針對高中新課程在創思培養方面提出具體建議。研究者透過文獻探討分析「新手設計師」應具備的知識，以及一般科技及工業設計的設計流程，並根據全國高中生高溫超導磁浮創意競賽的流程，提出高中生創意設計具備的流程，藉以檢視學生的學習歷程檔案、創意設計說明書以及半結構式訪談的資料，探析得獎團隊的創作設計歷程。

研究者為具體分析得獎團隊的創作歷程，將創作流程分為四個階段包含「資料蒐集與探究」、「構想發展與設計圖說」、「模型設計與實驗測試」以及「自我回饋與反省」等，並為各階段所應完成內容加以定義說明，以作為創作歷程各階段評分之用。研究者採用 Amabile (1983) 提出的「共識評量技巧 (Consensual assessment techniques)」，檢視高中生團隊在四個階段的表現，由三位評量者同時針對上述研究資料以相對評分方式獨立給分，透過肯德爾和諧係數檢驗各評量者間一致性信度，Kendall $\omega=0.79$ ，卡方值為 23.7，顯示三位評量者評分具有顯著相關。

研究發現在整個創作歷程中，得獎團隊在構想發展中的設計圖說與實驗測試兩個階段著力較多，尤其是金牌獎與銀牌獎得主在實驗測試部份有極大比重的投入。而在創作的過程中在資料蒐集與探究的部份投入最少，自我回饋反省的部份同樣著墨較少。若從新手設計師所應具備的「基礎知識」、「專業知識」與「過程知識」等三種知識加以分析，研究發現學生在過程知識的學習最為明顯。也可應證高中學生參與競賽可視為創思教學的一種學習活動，有利於培養其動手操作與問題解決的能力。較之業界的創思設計歷程，其組織結構與規模有極大差異，因而難以比較，但此歷程卻可作為培養新手設計師或進行前端概念設計之參考。本研究發現雖無法推論至所有高中學生的創發行爲，但對於透過競賽的辦理激發學生創造力的表現實具意義。

關鍵字：科技創作競賽、創意設計歷程

A Study on High School Students' Creative Design Process through the Innovative Design Competition

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Abstract

High school students tend to participate in the innovative competition in these years due to the active promotion from the Ministry of Education and diversity entrance approaches to universities. One of the most popular competitions for high school students is the "Innovative Design Competition using High Temperature Superconductor for Magnetic Levitation." Students formed teams of 3 to 5. Each team was to create a prototype model using High Temperature Superconductor (HTS) for Magnetic Levitation.

The research subjects of this study are 11 outstanding teams from the 5th Innovative Design Competition using High Temperature Superconductor for Magnetic Levitation. In order to track students' creative design process, students were required to record details of their discussion in the Creative Process Notebook, and also a Model Description to introduce their final product. A structured interview was conducted to obtain information regarding the design process.

In order to make a concrete analysis of the study subjects' design processes, the creative design processes were dividing into four stages that are (a) information collecting and inquiring; (b) creating alternative design ideas; (c) modeling and experiment; and (d) evaluate and feedback. The study applied Consensual Assessment Techniques to examine the subjects' performance of the creative four stages. There were three evaluators to grade independently. Examining by Kendall's W test, the Kendall's Coefficient of Concordance ω is 0.79 and the Chi-square is 23.7. It showed that three evaluators' grades are relevant significantly.

The major findings of this study suggested that (a) during the whole creative design processes, students focus on two stages including creating alternative design ideas; and modeling and experiment; less emphasis on information inquiring, evaluating and feedback; and (b) examining the knowledge of novice designer learnt during the competition, the process knowledge increased dramatically.

Keywords: Innovative design competition, creative design process

國中教師激發學生創意參與科展之探析

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摘要

所謂創造力是指產生新奇事物、理念或成果的能力，張春興於《張氏心理學辭典》將創造力視為在困境中為求解決問題而產生的想法，是一種突破舊有經驗限制的能力，也是一種以目的為導向的思考過程。按照 Guilford 的理論，擴散性思考代表人類的創造性能力。人類的創造力由於教育與環境的影響，有些人能運用自如，有些人卻將創造力埋藏於心中不去運用，是相當可惜!

創造力是社會進步的動力，所以唯有培養國中學生激發創造力及提供適當發揮創造力的環境才能為國家、社會及經濟創造更多新契機並帶來蓬勃發展。而全國科學展覽得獎學生受過由國立台灣科學教育館承辦全國中小學科學展覽會的考評與肯定，因此視為具創造力之個體，深入探討國中教師如何將國中學生培養成具創造力之人，及建立他們適當的教學環境。

本研究以立意取樣台中縣市國民中學帶領過參加全國科展得獎國中生之教師為研究參與者，並與五到六位研究參與者進行一至二次的半結構式深度訪談。歸納出教師在教學態度、教學方式及教學環境上的理念及教學方法的共同優勢性，以提供其他教師或相關教育單位作參考，期能共同培育出具創造力之學生。

本研究得到的結果，至少包括以下四項：

- 一、創意參與科展必備基礎(教師多為理工背景，任教有一定年資、科展想法源自於生活、實際參與者幾乎是國二生)。
- 二、把握科展創意核心因素(教師積極鼓勵學生參與科展、獲得家長大力支持、學生參與科展不致影響正課)。
- 三、激發科展過程精彩時刻(教師指導科展的“撇步”、引導學生突破瓶頸)。
- 四、提升科展創意有好方法(教師們平日的創意教學、亦師亦友的師生互動、給予學生充分的空間去創思)。

最後本研究也根據研究的結論針對學校老師及家長提出具體的建議。

關鍵字: 創造力、全國科學展覽

Session: A-2

張馨方 No provided

小組合作課程及訓練激發學生科學創造力與競爭力

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摘 要

本研究在嘉義市教育處卓越計畫的經費挹注之下，利用課餘時間安排課程，讓 213 位學生自願參與的學生進行訓練及動手製作。首先由教師團隊與社區專業人士合作，安排各項課程及進度表，課程內容涵蓋科學、生活科技、藝術與人文、語文、電腦及社會等領域，藉以引導參與者的學習興趣，然後再讓參與的學生採用自由編組，每小組 2~4 人，共分成 72 組。課程設計實施之前須先經過「課程設計的能力指標與使用策略檢核表」檢核通過後才予以實施。

實施過程則藉由學生作品、歷程檔案及現場拍攝的活動照片來分析學生創造力的改變，再由學生所參與的各項競賽成果來評估競爭力，發現以下幾點特點：一、學生在能力互補之下作品完成比例可以達到 91.31%。二、設計圖由簡略趨於精緻化，更可使用電腦輔助繪製。三、由按圖組合進入自我意識的融入，增加作品的美觀性。四、文字與照片的表達能夠更聚焦。五、科學原理的應用使得作品的機能性和功能性增加。六、工具與儀器的操作更流暢且會注意安全性。七、小組合作學習增加學習的意願，問題解決的能力提升，作品複雜性增加。八、表達能力與自信的增強。九、在競賽方面，學生所完成的作品均能獲得評審的好評，於嘉義市比賽、中區競賽及全國競賽均獲佳績，獲獎率為 65.71%。

課餘時間的應用是發展學生能力重要一環，由於家長對成效的期盼、學校行政與經費的支持、教師的課程設計與熱忱及學生參與的意願，仰賴這些環節一一的解套，才有辦法得以順利的推展，讓學習的過程更有創造力與競爭力。

關鍵詞：小組合作、創造力、競爭力

Session: A-2

張毓禎 No provided

如何利用科學創意競賽提升自然科的教學成效

易曉雯

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摘要

自然科學的學習除了獲得新知識外，更希望學生養成科學思考的模式來解決問題，所以適當的科學活動對於學生的學習，絕對有其必要性。本研究中，我們將科學創意競賽的比賽項目融入正式課程，經由全班共同參與，我們在正式比賽中，贏得兩個二等獎以及兩個三等獎；而科展以及青少年發明展的製作，更是學生主動學習的極至表現。在本次的教學活動中，第一部分的闖關活動，其應用的原理都是學生目前正在學習或即將要學的課題，所以研究者在賽前活動中發現，學生在有限的時間內，透過不斷地同儕互動觀摩學習，反而更能主動學習；教師只要再適時以開放式問題，來延伸討論，更能培養學生靈活的思考能力。第二部分是科展與青少年發明展，學生利用手邊的材料，進行創意設計，如創意骨牌、雨量警報器等。研究者發現，在本研究的課程設計下，學生會主動的探究問題，同時還會進行群體討論，學習同儕解決問題的方法，再透過合作學習來達成共同的目標。

關鍵字：科學創意競賽、科學展示、青少年發明展

Session: A-2

易曉雯 No provided

舞蹈的創作的創造力

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摘要：

人類因為交流而產生聲音，再加入語言講述，到興奮處，肢體的動作於是產生。由古至今、由東至西，舞蹈的發展由簡單入繁雜，受周遭各種社會發展的變化而更動。舞蹈表現出身體的線條、衝勁、情感、意象，肢體運用是發展舞蹈創作的泉源，本文尋求探索舞蹈界的各家各派如何運用肢體的方法，視為發展舞蹈創作的方法，舞動時可以表現感情思考，它是一種種群體動作的語言。相關動作的省思與貫穿之聯結，將帶動更多元的創意思考。

Dance Creativity

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Abstract

From antiquity until now, from the East to the West, the developing of dance is from simple to complexity, it changes because the sociality changes. Dance presents the choreography mints: binders, driven, emotion, image, and the use of body. This research find the way of body uses in the different choreography styles, the way of creative. When dance, we declare sentiment which is the world language, body language. The thought of movement and the mutuality of the thoughts are connecting which bring us more creativity.

Key word: Body Language Dance Thought

創意藝術人文教學之分享

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摘要

音樂律動教學如果是一種教育活動時，老師需要注意教些什麼？要怎麼教？這都是重點之一。在面對九年一貫藝術與人文的課程綱要下，老師需有視覺藝術、表演藝術、音樂統整的知識，擬定屬於自己的教學活動設計。然而在面對與以往不同的教學時，老師需跨越出自己害羞的情緒，打開心房，才能幫助學生擁有宏觀的藝術精神。

本文撰寫的目的，主要是想藉有自己實際的教學，分享其經驗，例如教學的起初設計、克服表演者的心理障礙、再來分析表演藝術的重要元素、教案設計，最後為大家做一個小結。

關鍵字：藝術人文、音樂律動

To share Creative arts teaching

Abstract

If the rhythm of teaching music is a kind of educational activities, teachers need to teach what » How to teach » This is one of the key. In the face of nine-year Arts and Humanities of the syllabus, teachers need for the visual arts, performing arts, music integration of knowledge, develop their own teaching and learning activities designed. But in the face of teaching and different from the past, teachers need to leap to his shy of the emotional, open atrium, in order to help students with the spirit of the art of macro.

The purpose of this article was written, mainly wanted to have their own practical teaching, share their experiences, such as teaching the initial design, performance to overcome the psychological barriers, then analysis of the important elements of the performing arts, design lesson plans, for you to make a final summary .

First, make friends and performing arts

we must know what is the performing arts, saying: "drama is like life, life is like drama," This will enable us to the performers have a wrong impression is that performance and daily life is out of touch, but why not show and Daily life to make a link, that is when the student, would not say that I was a student.

From a show of appreciation, we will feel as an actor in action, language and different, this time we found that the role on stage, material from everyday life are all from, or even appreciate the drama in the process of , Since that will not cry or laugh, angry.

Constitute the elements of the arts is the theme, format, content (Lv Yi Shang, 2005), in the performing arts arena to clever use of its elements, so that performance can be touched by the people, before this first from a certain element of the concept of performance To focus on.

創造力教育對弱勢兒童之應為與難為

~以花蓮縣國小高年級為例

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摘要

研究者所任教的花蓮縣國小長久以來因為低收入戶、隔代教養、單（寄）親家庭、親子年齡差距過大之學生合計人數，佔全校學生總數 20% 以上。一直屬於「教育優先區」的本校，其家長思考方式與社經背景對創造力教學方式所產生的影響為何？身為一線教師的我們，又該如何在增加原課程負擔下，推動這項目標呢？本研究用行動研究的方式透過課程實踐修正的歷程找出利用創造力為教學理論教學實施步驟為何？學生之工作內容為何？瞭解這樣的教學方式對於學生的學習動機、自主學習的影響。並探討參與教師的思考方式為何？有哪些心路歷程的轉變？教師們實施時所遇到的困難為何？如何因應？本研究根據上述發現如下：1.研究進行之初，先給學生進行簡單問卷，可以幫助教師瞭解學生對於創造力瞭解的起始點。可以瞭解學生自認自身擁有創造力的優勢在哪裡。可以幫助教師瞭解學生最有興趣也最有把握的才能，也可以減輕弱勢學生對於學習創造力的焦慮。2.無論社經背景高低，學生普遍認為自己是有創造力的，同時也反應所謂「草莓族」的這個世代雖然抗壓力不足，但是對於自身的創意卻是有十足的信心的。3.教學課程要分層進行，同時依照不同的難度給予孩子不同的進度，教師在教學的進行中必須預留較大的時間等候弱勢學生學習能力的成熟，如果一味的只是用逼繳交作業的心態來對待將無助於學生創造力的成長。4.一般人認為創造力只存在較資優學生身上，但藉由這樣的訓練後，一般學業成績較差的學生也認為自己的創造力有提高，同時喜歡這樣的練習活動。5.原有的課程壓力已經對學生造成不小的壓力，因而在回家完成作品上時間就相形不足。尤其弱勢學生回家後較缺乏家長支援，因而最好的方式還是盡量在學校完成，並降低難度與多給予製作時間將能較降低製作意願不足的問題。6.如何在營造溫馨上課氣氛與創造力成品完成度上取得平衡是一大難題。研究者對應的方式利用團隊競賽或者個人獎勵的方式，可以讓學生的上課秩序與成品完成度都能有所進步。尤其以團隊的方式完成作品也有助於創作資源多的學生與弱勢學生交流。7.社經地位較高家長看見孩子產出的創作成品改變對創造力教學會影響正式課程的負面想法，但社經地位較低的家長卻因為孩子製作產品所需的資源與時間過多，而對創造力教學有所焦慮進而卻步。

關鍵字：創造力教學、行動研究、偏遠地區、弱勢學生 T

Potentials and Weaknesses in Creative Education Towards Disadvantaged Students

Chiu Yu-Ping #1 Chen Chih-Hao#2

Abstract

The school in which the researcher teaches in Hualien County has long been consisted by at least twenty percent of students who are from low income and single parent families. This school has been categorized into the “priority education” program and as the frontline teachers, how should we promote creative education in the classes? This research selected the action research method to locate the procedures of creative education and furthermore to understand the work content of the students. The objective is to comprehend the effects of creative education on learning motivation and self learning. Furthermore, it aims to comprehend the schema models of the teachers, the changes that occurred during the teaching, the obstacles and how to overcome them. The results demonstrated the following: 1)provide questionnaires at the beginning of the course in order to help both the teacher and students understand their self identified creativity advantage, 2)regardless of their economic status, students demonstrated confidence in their creativity abilities, 3)throughout the course, the teaching must be broken down into a series of steps and difficulty, 4)after the teaching, all students show an improvement of their self assessed creative ability, 5)time flexibility of the projects, 6)provide warm classroom atmosphere and7)parents view of their projects.

Key words: creative education, action research, remote areas, disadvantaged students

我是創意料理王-以國小四年級學生創意學習與創作為例

曾永美

高雄師範大學博士生

摘要

本研究透過國語領域「餐盒裡的驚喜」為出發點，於綜合課程進行「創意料理王」之比賽，以探討學童的科學料理創作。此研究以高雄市壽山國小四年級學生為樣本，進行三個禮拜的教學，並以「創意料理王」為主題，讓學生進行科學料理創作，參加的隊伍共有五隊，創作比賽過程中並邀請六位學有專精的評審來做評分，選出最有創意的作品。研究結果如下：

- 1.學童透過上課學習有關創意的教學及故事，學童自己與小隊自行創作料理食譜，筆者並邀請學校主廚來與大家分享如何料理原則，及護理人員進行健康營養學的概念課程學習，進行創作比賽，以激發學生創作點子及健康保健的知識。
- 2.從學生的料理作品中可以看出學童對食材的創意與結合。
- 3.學童於烹飪創意過程中，可以減壓，降低平日學習上的焦慮。
- 4.學童於創作時，對於創造的培養、合作學習、統整能力的學習有更深一層的體認。

綜而言之，「創意料理王」對於學童在創意上的呈現是相當地快速與直接，學童的創作作品生動活潑，造型可愛逗趣，評審嘉潮不斷，不但讓學童得到成就感與統整能力，更提供學生展現創意的平臺。

I am a Creative Dishes King - to the small fourth-grade students as an example of creative learning and creativity

Abstract

This research explored students Creative Dishes in the integrated curriculum for "Creative Dishes King" competition. This study was small sample of fourth grade students of the Kaohsiung Shoushan elementary school. There were three weeks of teaching, and "Creative Dishes King" as the theme, allowing students to science and creative dishes. A total of five teams to participate in the team competition in the process. The author invited the six study and experts to do the assessment score, the most innovative works. The results are as follows:

1. Students learned about the innovative teaching and stories, children and their teams on their own creative dishes recipes, the author and invited the chef to school to share with you how the principles of cooking, and nursing staff to the concept of healthy nutrition courses, to create competition, creative ideas to stimulate students and health care knowledge.
2. Students from the cooking works could be seen in the children's creativity and the combination of ingredients.
3. Students reduced the anxiety and decompression of normal learning in the creative process.
4. Creativity in children, they learned the creation of the training, cooperative learning, the integration capacity of learning a deeper level of realization.

Comprehensive speaking, " Creative Dishes King " for students in the creative on the show is very quick and direct, children's works of lively, lovely shape beguiling. Students got a sense of achievement and integration capacity .

培育體驗學習的創造力~一所國民小學創造力教育行動的實踐與省思

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摘要

我們的確比以前人擁有的更多可能、更多的自由以及更多的選擇，然而也比以前人有更多的廢物、更多的平庸以及更多的垃圾要過濾(Michael Gelb, 1998。劉蘊芳譯, 2003)。想想看，在學校教學現場，我們是否有廢物課程、平庸課程以及垃圾課程呢？如果有，我們要如何讓它轉型、轉變與轉化？

由於這樣的省思，2004年起，以體驗學習為名的創造力教育就在嘉大附小的教學場域裡全面進行。這個體驗學習最重要的目的就是希望讓傳統吃吃喝喝的園遊會改變生命，並進行體驗學習的創造力教育實踐。歷經5個年頭的體驗學習創造力教育，包括了數學創造力教育、語文創造力教育、全球教育創造力教育、關懷生命創造力教育以及古老智慧薪傳體驗學習創造力教育。

這5個年度的體驗學習活動，所參與的人次已超過5000人次，產出的創造力作品與創意課程則遠遠超過5000個。嘉大附小體驗學習創造力教育經過五年的淬鍊，以及不斷的評估、計畫、行動與實踐、再評估修正的循環歷程，營造出屬於嘉大附小的體驗學習創造力教育模組，此一模組的實踐策略如下：

- 一、繪圖與寫作創造力培育：融入語文智慧、空間智慧的創造力學習活動，讓學習不再只是曇花一現，而是永遠帶得走的基本能力。
- 二、親師生三贏創造力合作：不論家長、學生或是教師，都參與創造力的評估、討論、行動與實踐，包括家長故事角的演出、學生創意開幕與閉幕式的表演、教師課程教學的經營與實踐，都可以看到親師生三贏的創造力教育體驗。
- 三、大學生與社區團隊創造力發揚：引進師資培育機構大學生及社區專家學者參與創造力活動，包括大學生的主題創意劇場演出以及社區專家學者參與講座與創造力開發研討。
- 四、環境佈置創造力發想：由學校的教職員工合作，產生環境佈置的創意美感，包含工友、實習教師以及學生都參與環境美學的建置，以主題為名的創造力環境佈置，使創造力的發想更具有可觀性。
- 五、闖關體驗學習創造力評鑑：由全體教師以及六年級學生參與的闖關體驗學習課程，包含了課程計畫、課程實施以及課程評鑑，充分展現創造力的專業、專心與專注，以體驗學習為主的評鑑活動，更是充分展現創造力的廣度與深度。

歷經5年的體驗學習創造力教育行動，在每一個年度課程與活動結束後，我們總是會進行課程與教學的省思，省思是我們修正最重要的依據，也是我們持續創造力發想的原動力。經過這樣長時間的創造力體驗學習課程，我們有以下的省思：

- 一、學校進行體驗學習創造力教育可以使教育跨越年齡、學科以及學習對象的限制。
- 二、學校進行體驗學習創造力教育有助於統整學生、教師、家長以及社區的學習力。
- 三、學校進行體驗學習創造力教育有效提升親師生的協同合作能力。
- 四、學校進行體驗學習創造力教育將可以培養學生的多元智能，促進多元的成功。

關於創造力教育，我們也有一些想法與建議：

- 一、創造力的時間經營急待經營與創意發想。
- 二、創造力的團隊經營需要更多的規劃與討論。
- 三、創造力的評鑑需要開發真實可評鑑的指標。

關鍵詞：體驗學習、創造力教育

Cultivating the creativeness from the experiential learning works~ the practice and reflection of the creative educational action in an elementary school

*CHEN, Chia-Ping ** Huang, Zui-Huay

Abstract

Since 2004, we had some experiential learning of the creative education in AEEESNCYU. The traditional school fair was shopping and eating. We wanted to change that. So we introduced those experiential learning projects from 2004 to 2008. In these years we have learned the creative projects of math, literacy, global education, character education and ancient wisdom heritage.

There were in total about 5000 persons learning multiple knowledge from these projects in the five years and creating more than 5000 works in them. By the analyses, plans, practices and the re-analyses, re-plans and re-practices, we extracted five patterns of the creative experiential learning projects:

1. to cultivate the painting and writing creativeness: integrating the multi-intelligence and making every child successful in many activities.
2. to collaborate teachers, parents and children: every person participates in the experiential learning projects and demonstrates creativeness from these projects.
3. to combine the resources of the community: inviting the students and teachers of the university to plan more lessons with our students.
4. to decorate the learning environment in creative ways: collocating the learning subjects to decorate the school and to learn the creativeness from the environment.
5. to evaluate the learning in the experiential ways: leaning by doing and evaluating by experiencing to make the learning effects deeper and wider.

From 2004 to 2008, we had five projects about the creative experiential learning. We reflected and altered every year to make these projects better. In these days we had some reflections and suggestions like these:

1. we may transcend the limits of ages, subjects, and learning styles in the creative experiential learning projects.
2. we may integrate the learning of students, parents, communities, and teachers and collaborate them.
3. we may promote children's multi-intelligences and make them better.
4. we need more time to generate the creativeness.
5. we need more debates in our teaching planning.
6. we need some indexes of the creativeness to evaluate our projects.

key words: experiential learning, creative education

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性理大學的興學宗旨

(儒家教育的原理- -從心所欲不踰矩、既竭卓爾及朽木糞土晝寢而 72 賢)

楊冀華

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摘要

西學雖有意義，卻僅有參考的價值。因為，西學的終極、形上、原理及關懷，跟我們的終極、形上、原理及關懷，頗有孔恩的典範不可共量性。既有比較的（學術）不倫不類，[1]更有批判（移植運用）的唐突、荒唐或荒謬。譬如，今天的哲學系師生多已不讀胡適的《中國哲學史》。更譬如，人是上帝的創造物。唯，中國的上帝是：蒂→帝→上帝→天→老天爺。因此，人是不是上帝的產物，已足堪討論，產物與創造物又絕然不同。所以，生與生生，筆者乃謂：下學上達的事實論。事實於仁，論於下學上達的識仁。識於自覺、覺醒、覺悟，自覺於人之異於禽獸者幾希，覺醒於直仁（直覺仁）及仁體體仁的認識論仁而知識論仁。覺悟於：覺醒的我是人，人是自我，自我是仁，仁是無限在有限忠。無限於：孔子的從心所欲不踰矩，顏淵的既竭吾才卓爾，《易傳》的先天而天弗違、後天而奉天時，孟子的和而不同之聖人之徒。所以，神無方、易無體，一陰一陽之謂道。繼之者，善也。成之者，性也。仁者見之，謂之仁。知者見之，謂之知。百姓日用而不知，習矣而不察焉。老天爺於：和而不同的惟敬與德之祭如在、賓于帝。祭如在、賓于帝於吾與點也，吾與點也於：生時享五倫之樂，死後生前賓于帝的享天倫之樂。因為，爺爺如此，奶奶也如此，外公外婆更如此。爸爸如此，媽媽也如此，你更如此，我們的孫子還都如此。因此：

我本來是位凡夫俗子（用習者），深究儒學後（見），發現了自己的價值（仁或知），倚之而向不朽（意義）。然而，近來友人跟筆者交換儒旨與創造力的看法，對筆者的研究頗為驚奇。最後，他們邀請筆者提報有關儒旨及創造力的看法，拙作即成，要點如下：

一 創造力的反省：心理學→教育學→哲學→儒學。

二 儒學的現代化- -由創造力展現儒旨（儒家教育原理）：

(1)原理、理論依據及其結果：① 原理：透過文獻，語言教學的學習古人如何思考、如何生活、如何追求與創造意義及其實踐- -禮。② 理論依據：程子的〈識仁〉、朱子的〈仁說〉及宋明理學的性理（超心理）。③ 結果：存有的開顯而存有即仁。唯，開顯而非彰顯。④ 結果的具體個例：① 孔子的從心所欲不踰矩、大人或見群龍無首吉。② 宰我的朽木糞土晝寢而 72 賢之一。③ 顏淵的既竭吾才卓爾（獨立而不改、強立而不反）。④ 孟子：心。⑤ 荀子：禮。⑥ 周子：誠。⑦ 熊子：一元實體- -仁體體仁。⑧ 仁=無限在有限忠。

(2)關鍵點或切入點：① 傳統的說法：① 人。② 人心。③ 心性。② 西方的說法：① 本體仁。② 主體仁。③ 客體仁。④ 實體仁。⑤ 和而不同的同一個仁。③ 筆者的說法：① 語言：日常生活。② 文字：性理。③ 性理的內涵：甲.孔子：中人以下、中人及中人以上之別。乙.孟子：接續孔子闡釋中人以上為：善→信→美→大→聖→神。丙.荀子：接續孔孟闡釋中人以下為：人→禽獸→草木→水火→氣。丙.重點即此處的說法。

(3)教材、教法與批判：① 教材即六經與六藝（文武合一教學或經世齋與治事齋）。② 教法即變化氣質的有教無類與因材施教：學學半的數。③ 批判即教的長善救其失之批判意義：內省自訟→子路不說→朽木糞土→鳴鼓而攻之→殺少正卯與誅一夫→ 兵車以對→革命！（儒家的批判精神）

關鍵詞：仁、儒學、自我、創造力、儒家教育原理、無限在有限忠。

Session: A-5

楊冀華 NO PROVIDED

高雄場

場次 B

KAOHSIUNG

SESSION B

六頂創意思考帽於專業護理概念創意教學之運用

輔英科技大學護理學院助理教授

摘要

二十一世紀為一創新的世代，面對知識快速的成長與進步，護理教育中如何培養護生具備有創造力的特質，為當今護理發展之重點。台灣護理學會及中華民國護理師及護士公會每年會舉辦創造力的競賽活動，由參賽者中選出最具創意價值的作品，去年已經有 195 件創意成品參與比賽，足見創造力於臨床護理之運用已如火如荼地進行與發展。然而，創造力的培養需要由護理教育開始做起。如何於課程中融入創造思考教學，為當今護理教師思考之重點。專業護理概念為本校護理課程的特色，此課程有融入批判思考、創造思考、解決問題、和統合應用等能力，其中創造思考能力以護理活動所呈現出的流暢力、變通力、與獨創力來代表護生的創造思考能力，並以陳龍安(1998)問、想、做、評模式為教學策略，藉以激發學生的流暢力、變通力、與獨創力。此外，本課程亦以角色扮演方式，融入六頂創意思考帽(黃榮村和林正弘, 2001)於護理臨床案例中，六頂思考帽分別為紅帽(情緒直接感覺)、黑帽(負面思想)、白帽(客觀中立)、黃帽(正面思想)、綠帽(創意新想法)、藍帽(歸納總結)，於課程中以一情境模擬的案例為主軸，六組學生分別扮演紅帽(病患角色)、黑帽(病患家屬角色)、白帽(主護護士角色)、黃帽(護理長角色)、綠帽(專科護理師角色)、藍帽(護理督導角色)；透過不同人物的角色扮演，針對一個護理臨床案例，可以多元角度進行思考，藉此擴充護生的思考廣度與寬度，由不同的角度看相同的事件，以提昇其思考的視野，期許陳龍安(1998)問、想、做、評模式及六頂創意思考帽(黃榮村和林正弘, 2001)於專業護理概念課程的運用，能提昇護生的創造思考能力。

Creative Teaching applied Six Thinking Hats in the Course of Professional Nursing Concepts

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Abstract

Facing the growth and improvement of knowledge rapidly during the creative Century 21, the foci of nursing development now is to cultivate the characters of creativity for nursing students in nursing education. Taiwan Nursing Association and The National Union of Nurses' Association have conducted the competition activities of creativity annually and elected the most valuable creative products. Creativity was progressing and developing in the clinic nursing passionately and there are 195 creative products participated in the competition activities during last year. However, the training of creativity should start from the nursing education and the focus of nursing teachers today may think the curriculum involved with creative teaching. Professional Nursing Concepts is the character of our nursing curriculum, which merged the abilities of critical thinking, creative thinking, problem-solving, and integrity. For the creativity, the author used Chen's (1998) model of asking, thinking, doing, and evaluating to inspire students' fluency, flexibility, and uniqueness of creativity in terms of nursing activities. Additionally, the author used role-playing with six thinking hats (Huang and Lin, 2001) in the nursing clinical case. Six thinking hats included red hat (emotional and direct feeling), black hat(negative thinking), white hat(neutral and objective thinking), yellow hat(positive thinking), green hat(creative and new ideas), blue hat(integration and conclusion). A simulation-case in the course as the major topic, students in six group played as red hat(patient role), black hat (patient's family), white hat(primary nurse), yellow hat(head nurse), green hat(clinical nurse specialist), blue hat(nurse supervise). Based on one nursing clinical case, through role-playing from the different persons, nursing students can think from various perspectives, which can expand their thinking broadly, and think one thing from the different angles that can promote their thinking point of view. It is expected that Chen's (1998) model of asking, thinking, doing with six thinking hats (Huang and Lin, 2001) in the course of Professional Nursing Concepts can promote the abilities of creative thinking for nursing students.

亞斯柏格學生科技創造力之研究

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摘要

本研究旨在探討國小高年級亞斯柏格症學生科技創造力之表現。以一名國小六年級具數理優勢能力的亞斯柏格症學生和一位自然與生活科技領域能力優異的國小六年級學生為研究對象，分別施予科技創造力測驗，將測驗原始分數對照常模，換算成百分等級與 T 分數等量化資料，綜合測驗中所記錄學生的作答內容與測驗中特殊表現等質性資料，加以分析歸納，以瞭解研究對象在科技創造力之整體表現及「流暢力」、「變通力」、「獨創力」、「精進力」、「視覺造型」等分測驗的表現，與影響這五項能力表現的原因。同時，本研究並比較普通生和亞斯柏格學生在科技創造力上表現的差異，更進而分析亞斯柏格症學生在科技創造力表現的優勢與弱勢能力。研究結果如下：

- 一、亞斯柏格症學生在科技創造力之整體表現屬中上程度（百分等級 82），然各項能力之間落差極大，「字詞聯想」明顯優於「書包設計」的表現。
- 二、亞斯柏格症學生在流暢力、變通力、獨創力、精進力等分測驗中「字詞聯想」均優於「書包設計」。
- 三、「書包設計」中的視覺造型能力是亞斯柏格症學生表現最弱的。
- 四、精進力是亞斯柏格症學生在科技創造力中的優勢能力。
- 五、視覺造型是亞斯柏格症高年級學生在科技創造力中的弱勢能力。

關鍵詞：亞斯柏格症、科技創造力

A Study on Technological Creativity Ability of an Asperger Student

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Abstract

The purpose of this study was to investigate the ability of technological creativity of a six grade Asperger pupil. Participants were an Asperger pupil, and a six grade normal pupil both of whom were good in science. The “Technological Creativity Test” was applied in this research to better understand the participants’ ability in technological creativity. T-score and percentile rank were analyzed as well as the ability of fluency, flexibility, originality, elaboration, and visual art in technological creativity test. Moreover, the differences of technological creativity ability between these two participants were also compared. The results were as follows:

1. The technological creativity ability of Asperger pupil was above average level (PR=82). However, there were gaps between abilities, “Remote Word Association” was better than “Schoolbag Design”.

2. In the abilities of fluency, flexibility, originality, and elaboration, the Asperger pupil performed better in “Remote Word Association” rather than “Schoolbag Design”.

3. The weakest ability of Asperger pupil was “Schoolbag design” in “Visual Art”.

4. The strength ability of Asperger pupil was “Elaboration”.

5. The weakness ability of Asperger pupil “Visual Art”.

Keywords: Asperger’s Syndrome, technological creativity

Session:B-1

熊同鑫 未提供

Integrated Indigenous Cultures into Creative Science Teaching Materials

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Abstract

The hidden curriculum has a strong impact on student's cognition of society. It is could be a hidden influence on students' thinking of science conceptions and knowledge of daily life by utilizing teaching materials that integrated indigenous cultures and science knowledge. It is also assumed that there is possibility changed peoples' stereotype or misunderstandings about indigenous traditional cultures through demonstrating created teaching materials. To enhance indigenous students' interests on their traditional cultures and science learning as well as others understanding of indigenous cultures, the purpose of current study is to create teaching materials which integrated indigenous cultures and science knowledge. It is also expected that indigenous students may create some ideals of develop teaching materials which are integrating cultures and science conceptions in the future.

Keywords : Indigenous education, science education, creative teaching material

夢想展翅、創意起飛～國小蝴蝶生態教材創新之行動

研究

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摘要

本研究旨在都會型學校環境中，推廣蝴蝶生態教育並研發蝴蝶生態創新教材。由於都會型學校的環境維護不易，在生態環境的營造上時常會面臨校園環境消毒與生態教材維護的兩難，導致雖擁有生態教材園，但卻無法發揮最大效用。而藉由創新蝴蝶生態教材（蝴蝶魔法牌、蝴蝶漫畫）的研發，在多元多樣的活動中提升學習動機與興趣之外，更幫助學生從「學習玩遊戲、遊戲玩學習」過程中發現問題、運用策略、進而解決問題、激發創意。而三位自然科教師在長達兩年的教材研發過程中，以多元的教學活動進行蝴蝶生態教育，與學生在遭遇問題時共同解決，並嘗試以研發的創新生態教材融入教學活動，提升學生的創意與學習效果。

在第一年的教學歷程中：「蝴蝶劇場」，鼓勵學生腦力激盪解除幼蟲成長過程危機；「猜猜我是誰與蝴蝶大會考」，以有獎徵答與會考方式進行評量；透過「抽班蝶」與「蝴蝶觀察與飼養」活動，瞭解蝴蝶的生活史；「我的蝴蝶小書創作競賽與書展」與「專題演講—幻色紫蝶揭密生態研習」，鼓勵學生多元學習；「打造蝴蝶美樂地」，親手種植食草與蜜源植物，規畫蝴蝶永續生存環境；「蝴蝶仙子創作競賽」與「蝴蝶主題多元發表會」，多元呈現學習成果；進而研發出創新生態教材「蝴蝶牌卡」，並舉辦「蝴蝶牌卡大賽」，以遊戲型態創意教學帶領學生進行學習，在高度學習興趣中，培養學生問題解決能力。

而在第二年的教學歷程中，考量到校園生態教材缺乏因素，兩位教師嘗試反向先以：「卡卡卡！卡進腦袋瓜」蝴蝶牌卡遊戲引導初步認識；「黑白配！看誰最登對」，配對方式進行學習評量；「來作客！蟲蟲遊學團」，透過長期的觀察與飼養，「班」蝶遊學與作客活動瞭解蝴蝶的生活史；「悄悄話！我想對你說」，引導學生將飼養心得與想法透過圖文創作表達與蝶互動的情感；「飆創意！漫畫大車拼」與「蝶蝶樂！蝴蝶魔法書」，舉辦漫畫競賽鼓勵學生發揮創意，並配合蝴蝶生態認知概念與視覺傳達，研發第二套創新生態教材「蝴蝶漫畫」；「追蝶人！學習加油站」，舉辦蝴蝶生態專題演講，引導學生進行蝴蝶觀察、分享成果；「巧裝扮！蝶舞化妝會」，鼓勵學生根據蝴蝶的外形特徵與生態習性巧妝打扮；「蝶對蝶！共話蝴蝶夢」，結合社團組織辦理蝴蝶生態教育推廣種子教師研習活動，分享實施經驗並增進社區發展向心力。

Wing it, the Dream Spread out the Creativity

~An action research of butterfly ecological education on elementary school campus.

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Abstract

The purpose of this research is to spread the education of butterfly ecology and to produce creative education materials on the same subject in a municipal school environment. The environment is confronted with a bilateral challenge: on the one hand, it is privileged with a natural environment for education, but on the other hand, it is often damaged by the sanitizing system on campus, therefore, it has become very difficult to maintain the natural environment for educational purposes. With the production of the educational materials for creative butterfly ecological , such as “*Magical Butterfly Cards*” and “*Butterfly Comics*”, it can be beneficial to the students in various ways—for instance, the related activities, will motivate students and stimulate their interests in learning about butterflies; also, through the process of “learning through playing,” students develop the critical thinking ability and problem solving skills. Our team members have spent two years in this project and have developed multiple activities for butterfly ecological education. We have also tried to incorporate the materials into the activities for students’ learning and creativity.

During the first year of teaching, we conducted such activities as “*Butterfly Theater, Guess Who I Am*” and *Butterfly Quizzes*”, “*Spotted Butterfly Lottery*, Observing and Nurturing Butterflies”, “*My Little Butterflies Book Contest and Exhibition*”, “*Lectures on Magical Purple-Spotted Butterflies*”, “*Creating a Butterfly-Beauty Haven*”, “*Butterfly Genies Writing Contest*”, and “*Butterfly Multiple Convention*”. The activities are purposed to help students experiment what they have learned with an opportunity to exhibit the result of their learning. Thereby, more materials, such as “*Magical Butterfly Cards*”, have been produced, and contests, such as “*Magical Butterfly Cards Contest*”, have been held. This is to assist the students to learn with the style of game playing in order to build their problem solving ability.

提升師生創造力教學專業能力之行動研究

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摘要

幼兒教師的創造力素養和創造力教學表現影響幼兒創造力學習品質，足見提供職前幼兒教師創造力相關課程訓練之重要性。因此，本研究目的旨在——規劃激發學生創造力之課程，紀錄與省思教師創造力教學歷程以及評估學生學習經驗，期待研究結果有助於提昇教師自身創造力教學之專業能力，及培養具備從事幼兒創造力教學專業能力的職前幼兒教師。

為達上述目的，本研究採用「文獻分析」規劃「幼兒創意教學與活動」之課程內容，並且透過「行動研究法」踐行之。本研究之研究對象，包括選修本課程的學生 21 位，以及教學助理 1 位，共計 22 位。本研究之步驟與流程包含下列階段——評估師生現況與問題；研擬可行的行動方案；評估與修正方案；採取行動與研究策略。根據上述研究步驟與流程，本研究資料蒐集期間為 96 年 9 月至 97 年 1 月，共計 4 個月。資料蒐集方法包括——「參與觀察」、「訪談」、「教學省思」與「文件分析」等，繼而根據所蒐集到的觀察紀錄、回饋單、教學助理日誌、教學省思日誌、學習檔案會議紀錄、學習檔案心得報告、以及學習檔案試教建議等資料進行編碼與分析工作。

最後本研究從創造力課程、創意守門人、創造力教學策略、合作學習、問題情境、學習檔案評量等提出結論與省思。本研究以研究者教學之班級為範圍，在推論上恐有限制。

關鍵字：創造力、創造力教學

An Action Research on Improving Teacher's and Student Teachers' professional competences of Teaching for Creativity

Abstract

The cultivation of creativity and creative instructions of teachers of young children affects the students' learning quality of creativity, which indicates the importance of providing the student teachers of young children relative training programs of creativity. Hence, the purpose of this study are to design a program to motivate students' creativity, to record and reflect the teacher's instructions of creativity, and evaluate the students' learning experiences with the expectation that the result would help the teacher to improve professional competences of teaching for creativity and also to train the student teachers to cultivate the professional competences of teaching for creativity.

To accomplish the purposes mentioned above, the research method of this study was conducted with "documentary analysis" to design the content of the teaching program "The Instructions and Activities for Creativity to Young Children", and conducted in the way of "Action Research". The participants of this study are 22 in total, including 21 students who took this course and one teaching assistant. The procedure and the process of this study are as following: first, to evaluate the teacher's and student teachers' present situations and problems; second, to design the feasible action program; third, to estimate and modify the action program; finally, to carry out the action program and the research strategy. The time of data collections began from September, 2007 to January, 2008, totally in four months. Thoroughly, the researcher would use "participate observation", "interview", "teaching reflection" and "the document analysis" etc. to collected data. Then, the following up is to decode and analyze the collections including observation records, reflections, teaching-assistant dairy, teaching introspections dairy, learning portfolios of conference records, reflections and suggestions for the practice teaching.

This study found out that when the creativity become one part of living and thinking process both to the teachers and the students, the distance between human beings and creativity would become much closer. Finally the researcher provided some conclusions and reflections according to the following approaches, i.e. "the creative curriculum", "creative gate keeper", "creative teaching strategy", "cooperative learning", "situated instruction", and "the portfolio assessment".

創意教學行動研究－「數學知識應用於落葉打掃問題的探索」

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摘要

「學數學有甚麼好處？」數學是一種語言，一種理性思考的語言，學數學不該只是習的如何計算，否則充其量我們只是一部簡易型計算機。理性思考問題的解決並用量化資料描述呈現就是數學的一部分，生活中存在許多數學問題，而每一個數學式子與數學符號正是思考歷程中最精簡符號的紀錄。數學起源於人類為求生存，不管是哪一民族，人類在求生存的過程中遇到許多共通性的問題，必須解決問題才能使民族生命延續。數學原本就存在於宇宙中，而人類總在問題發生的同時，或發現問題後才開始思考，因此問題的解決對人類文明的進步與福祉著實與數學有密不可分的关系。有鑑於少子化，面對偌大的校園綠地，響應環保的同時，校園內每年3,4月季節更替之際，校園裏的幾株桃花心木落葉繽紛，此時打掃工作幾乎成了師生共同難題。在此情況之下，因此本篇報告提出「數學知識應用於落葉打掃問題的探索」從變數關聯性的相關生活中存在的每一個問題除了質性描述狀態，還可以將問題量化描述程度，並經由理性思考的過程在有限資源中得到問題的最佳解。本篇報告「數學知識應用於落葉打掃問題探索」應用國中數學並運用統計軟體來計算，透過物理學家高德拉特限制理論的問題解決三個歷程(1)要改變什麼(2)要改變成什麼(3)要如何改變，從個體的常識直覺思考透過團隊合作理性思考，進而完成教學目標(1)應用國中所學數學知識進行校園落葉打掃問題的探索(2)學習結合生活發展真知力行的學習行動力(3)在問題解決歷程中培養尊重關懷與團隊合作、主動探索與創新研究、組織規畫與積極實踐、獨立思考與解決問題、運用科技與善用資訊等基本能力(4)在問題情境的教學資源中主動探索符合普遍性、鄉土性、真實性、安全性的問題。最後提出「數學知識應用於落葉打掃問題的探索」創意教學行動研究研究結論與建議。

場次：B-2

陳玉燕 NO PROVIDED

制服誘惑－藝術創意行動與國中生性別認同的相遇

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摘要

「今天，你被制服了嗎？」¹，「制服」是最為人熟悉的一種服裝，也一直是爭議的焦點，其中隱含著身體被限制和立即服從的壓迫感，制服在各方面的界定和規訓，相對於背後的迷戀和誘惑皆存在著許多問題；「國中生」正處身心發展階段，十分重視自身所展現的樣貌，相較於過去傳統的制服，現在國中生無形中從日常生活表現出不同於以往的制服文化和新興趨勢，認識自己才會有所成長！

研究者選擇以實際參與觀察深入瞭解，進行主題式藝術創意行動，從國中生對於外表的重視，延伸到對制服的穿著裝扮，呈現自我獨特氣質的認同與差異，探討潛在的性別意識與權力的流動，期望能得知國中生對制服的想像認識、存在展現的樣貌及生活中遭遇抵抗的經驗；針對「制服」所延伸出來的潛在問題加以反思突破，擬出創新跨領域的互動，從行動中與研究對象共同探討與分享。

冀望由藝術行動與性別認同相遇所激起的火花，以彈性開放、包容尊重個別差異的態度，從「制服」出發，使國中生在參與創意行動中，瞭解制服的規定、性別迷思、歷史演變、設計不同類型的穿著，表達發揮出個人與眾不同的氣質體現與美感經驗，創造另類的制服流行新趨勢，共同迎接性別多元的時代環境。

關鍵字：制服、藝術行動、性別認同、性別差異

¹ 美國的希爾頓（Conrad N. Hilton）經營旅館的座右銘是：「你今天對客人微笑了嗎？」，也是他在 1957 年所著 *Be My Guest* 一書的核心內容；另外，台灣企業家施振榮在 *天下雜誌* 第 395 期（2008，4 月）提出「品牌台灣的第三堂課-微笑曲線 引領美食國際化」，同樣以「你今天微笑了嗎？施振榮價值哲學」和「今天你笑了嗎？」為主要觀點，研究者將此句做局部修改。

Uniforms Temptation – the encounter between art creativity action and the students' gender identities

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Abstract

"Today, are you be uniformed?" "Uniforms" is one of the most familiar clothes. That is also the focus of controversy. It implies that the body immediately be restricted and pressured. Uniforms are in all aspects of the discipline and the underlying fascination and temptation. The stage of "junior high school students" is between physical and mental development. The students attach great importance to show themselves and daily show the differences from the previous traditional uniforms culture and fashion.

The researcher chooses to participate in the actual observation of in-depth understanding and the theme of art creativity action. From the importance for the students' appearance, the subject is extended to the wearing of uniforms and the unique character of self gender identity and differences. Exploring the potential of gender awareness, it looks forward to the uniforms imagination and the appearance of the resistance encountered in the experience of life.

Hope the encounter between art creativity action and gender identity is provoked by flexible, open and tolerant attitude of respect for individual differences. To expect the junior high school students join in the operation can understand the provisions, gender myths and historical evolution, create different types of personal uniforms, show an alternative uniform popular trend, and meet the diversity gender times.

Keywords: uniforms, art creativity action, gender identity, gender differences

大地的饗宴—2001-2007 年澎湖國際地景藝術節創造力

作品分析

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澎湖縣興仁國小教師

摘要

地景包含了地形、地質與地貌。

澎湖縣的柱狀玄武岩、方山地形，擁有豐富的型態與熔岩規模，在 2002 年獲文建會提報為世界遺產的潛力點之一。放眼世界，本身就是一項難得的資產，其玄武岩地貌，更是大自然鬼斧神工的藝術品。

澎湖國際地景藝術節自 2001 年開辦至今（2008 年 8 月），已經舉辦了七年六屆。其中 2003 年因為 SARS 的緣故，活動被迫取消。六屆中，總共產生了四十三件作品。

藝術家的創造力思維是什麼？他們如何觀看？又期望觀看者如何去觀看？作品中，如何結合地方特色，將歷史經驗、人文背景、地理環境……做一切入與擷取？作為一個具有地方特色的文化節活動，它成功了嗎？主辦者在未來還可以有什麼樣新的思維？種種問題，都讓研究者有進一步探究的動機。

第一章緒論。第二章談地景、藝術與生活的關係。將地景藝術融入公眾生活的空間，絕對能夠創造出更有文化思考、藝術薰陶的環境，也能藉由視覺藝術的作品，提供更多文化刺激，提升大眾的文化意識，進而關懷自身環境。

第三章依應用媒材、表現形式、表現手法及主題呈現的不同，來分析歷屆澎湖地景藝術節的作品。每一屆，雖有不同的主題，但在大主題下，仍看到不同訴求的次子題。藝術家運用豐富的創造力、想像力，心靈手巧地將作品呈現出來，不容質疑，是一場難得的創造力分享，豐富的大地饗宴。

第四章探析作品中呈現出的深層意涵。研究者看到了傳統與現代的交錯，首先，藝術家運用大量本土化的媒材，創造性的思維，表達了在地的文化情感。2006 年後的作品趨勢則走向意識主導具象，更多新的想法在這塊土地上進行辯證。

澎湖藝術家的作品，對這片土地有深切的期望，那一份強烈的呼告，是原鄉人才會有的特殊情懷。不同國籍的藝術家（歷屆有來自台灣、美國、日本、法國、義大利等地），則帶來不同思維的演繹，除創造力的共享外，也有文化交流中身份認同的問題。

第五章探討眾聲喧嘩以後，整體的省思。史密森曾說：「不是要把藝術品放在大地上，而是要把大地納進藝術品中。」若以此為觀看的軸心，則澎湖地景藝術節的作品很多都不符合。只是將藝術品放在大地上，可能看到了創意，卻看不到地景藝術的特質。經費不足與安全的考量，都限制了作品的格局。

第六章進行結論與建議。

關鍵字：創造力、地景藝術、澎湖國際地景藝術節

The Feast of the Earth

An Analysis for the Creative Artworks of Penghu International Earth Art Festival, 2001-2007

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Abstract

Landscape is comprised of landform, geology and terrain.

The columnar basalts and basalt mesas in Penghu County consist of an abundant of shapes and large scales of lava. It was proposed by the Council for Cultural Affairs as one of the potential spots of the world heritage in 2002. The place itself is a remarkable asset of the world and its basalt landform is yet a spectacular nature's work of art.

Penghu International Earth Art Festival was held 6 times in 7 years between 2001 and August 2008. The event in 2003 was forced to be canceled due to the outbreak of SARS. In total, 43 artworks were produced throughout 6 events that had taken place.

What is the creative thinking of the artists? How do they see? What do they want the viewers to see? How to combine regional features and make incision and retrieval of history, cultural backgrounds and geographical environments in the works? Did the event succeed in representing itself as a cultural festival of regional color? What kind of new thinking will the organizers have in the future? There are all sorts of questions that prompted researchers to explore further.

The first chapter is the Preface. The relationship of land, art and life will be discussed in the second chapter. Assimilating land art into the spaces of public life can definitely create an environment of more cultural thinking and artistic influences. Visual art works can also be introduced to offer more cultural stimulation and enhance public's cultural awareness, thus bringing care on personal environments.

In the third chapter, artworks from the past Penghu Earth Art Festivals will be analyzed through the aspects of medium, form and method of expression and topic. Although the festival features different themes each year, we can still see sub-themes with representing different meanings under the major topic. The artists produced the works with rich creativity, imaginations and ingenuity. The festival is indisputably an extraordinary event of creativity sharing and an abundant feast of the earth.

The fourth chapter will be exploring into the deeper meanings of the works. Researcher has seen the interfold of tradition and modern. At first, artists applied large amounts of localized medium and creative thinking to express the regional affections. But after 2006, the works has begins to develop towards a conscious-guided trend, more new thoughts are joining together on this land.

The works made by the artists of Penghu shows profound hopes for this land, and those intense affections can only have come from the locals. Artists of different nationalities (Artists from Taiwan, the U.S., Japan, France and Italy have participated in the previous events) promoted the deduction of different thinking. Apart from creativity communion, there are issues of identification in cultural exchange.

The fifth chapter will focus on comprehensive introspection after the whole event. Smithsonian once said, "Land should assimilate into artworks, not placing artworks onto the land." If we use this as a standard point of view, then many artworks from the Penghu Earth Art Festival will not be qualified. If we only place artworks onto the land, creativity could be seen, but the distinctive feature of land art is nowhere to be found. The patterns of the works are being restricted by insufficient funding and safety concerns.

The sixth chapter is conclusion and suggestion.

Keywords: Creativity, land art/earth art, Penghu International Earth Art Festival.

心的快樂·新的創造

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摘要

「創造力」，不僅是人類生命演化過程中的重要驅力，我國的創造力的推展工作亦正以一種銳不可擋之姿持續進行，舉凡創造力教學、創新教學等各種教學法蔚為風行。在創造的路途中，因為偶爾的「孤獨」而窒礙難行。如同 May (2001) 所提的：「體驗來自潛意識的洞見，此時須進入孤獨之境」。

個體獨處時，往往無法承受那密集的孤獨感，沒有一套適當的心靈程序來支持，深陷外在刺激的桎梏；種種的感受可能對個體的心靈和諧產生莫大的威脅。因此如何做適當的情緒調節及運用情緒調節策略逐漸是一門重要的課題(Parkinson, 2001)。

一般而言，情緒調節能力愈佳的個體，面對社會及外在環境改變時，能正確的察覺自己的情緒，進而自我調節，因此心理、生活適應亦較佳(Leventhal, 1990)。而青春期的學生不僅要面對身體快速的變化，亦得同時面臨求逐漸增加的學業壓力、不同階段的未來發展等，容易對情緒穩定及發展產生了一定的壓力。在相同壓力之下，為什麼有些人仍然可以快樂面對？有些人則不？是因為個體的情緒調節能力能緩和環境造成的壓力，它能幫助個體有效因應不愉快之情境。因此，本研究擬探討國小學生的情緒調節情況。

根據國內衛生署國健局(2003)指出，國民憂鬱症之比例日趨升高，Dennis(1996)之研究也發現只有百分之二十的美國人自評是快樂的，種種數據都直接顯示出負面情緒問題已成為社會的一大警訊。正向心理學，這門「快樂的科學」，由美國心理學 Seligman 於 1998 正式提倡；以人類的正向情緒為出發點。九〇年代，關於正向情緒之研究百花齊放，針對快樂的研究亦約有 1700 多篇(Myers & Diener, 1997a)。其中國內、外的研究對象多偏重於大學生、成人，較少論及國小學生，而國小高年級學生正值身心發展的關鍵時期，其情緒發展之動盪是不容忽視的。因此，本研究擬探討國小學生的快樂感受情況。

多數學者認為正向情緒可以促進認知的變通性及創造性問題解決的能力。Goleman(1996)認為情緒智力中的激勵因素能促進個體創造力表現；可知個體能否妥善運用情緒來增進創造思考能力，取決其情緒調節歷程。Isen(2000)亦指出正向情緒基於兩個原始機制能夠促進個體的創造力：(1)正向情緒能增加個體的變通力，並擴大對點子之間的聯結；(2)正向情緒能增加訊息處理的有效性，避免無關的訊息干擾，維持最後決定的品質。由此可推知：個體經由情緒調節的過程對外在刺激做出適當的反應，能增進其變通力、精進力等。因此，本研究擬探討國小學生的情緒調節能力與創造力自我效能的關係。

根據上述提及之研究動機，本研究之研究目的如下：

- 一、瞭解國小學生的情緒調節與快樂之現況。
- 二、探討國小學生情緒調節與快樂感受之相關情形。
- 三、探討國小學生的情緒調節與創造力自我效能之相關情形。
- 四、探討不同情緒調節能力的國小學生在創造力自我效能表現之差異情形。

依據研究動機與目的，本研究擬採用葉玉珠(2003)編製的「情緒能力量表」及研究者自編之「快樂量表」及「創造力自我效能量表」。

關鍵詞：情緒調節、快樂、創造力自我效能

場次：B-3

陳姘蓁 NO PROVIDED

健康與體育課程創造力教學探討-以自行車教學設計為例

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摘要

九年一貫課程強調以人性化、生活化、適性化、統整化與現代化的學習領域教育活動，「以學生為中心，以生活為內涵」引導兒童去學習，教師透過課程統整協助學生建構知識、培養帶的走的能力以及終身學習能力，並且培養身心充分發展的健全國民與世界公民。教育部於 2001 年推出「創造力教育白皮書」提倡創意教學的重要性。創意教學，指的是教師能夠發展並運用新奇的、原創的或發明的教學方法，來達成教學或教育目標，創意教學有助於學生各種知識與能力的學習。（王雅玲，2002）。

我國之體育教學，傳統上偏重於運動技能的學習，多數體育教師仍以現成之教案照本宣科，缺乏創意教學之新意（陳彥君、蔡秀芳，2004）。體育課程中教師若透過具有創意的教學活動，配合課程統整教學，除了引導學生獲得運動技能外，能夠結合生活經驗和生活環境，透過體育課程導入各科教學與活動，引發學習興趣，讓學生接觸多樣化的教學情境與實際操作學習而協助其它科目知識的建構與學習，將能夠大大提升體育課程的地位，也將使統整教學真正落實，這將是統整課程落實的關鍵。

自行車運動是近年來教育部推展的熱門休閒運動項目，而且也具有經濟及環保的效益，各縣市政府也紛紛興建自行車專用道以推展休閒及觀光產業。本文將探討健康與體育課程創造力教學之意義與理論基礎，並以自行車教學單元設計健康與體育統整課程，整合生命教育、鄉土教育、環境教育、自然、社會、藝術與人文...等課程，藉由具有創造力的自行車教學活動統整相關科目進行教學，協助學生具備正確的運動觀念與相關知識，未來能以正確的態度從事有益身心的休閒活動，進而影響家人，以達到健康與體育課程創造力教學之教育目標。

關鍵詞：創造力教學、九年一貫課程、課程統整

The Study of Creativity Teaching in the Field of Health-Physical Education - Bicycle Teaching Plan for Example

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Abstract

Nine-year integrated education emphasized the learning field of friendly, daily, adaptive, integrated, and modern. Students and life are the points of the education. Teachers guide students to built in knowledge through integrated courses, and develop students' useful abilities to become healthy and matured citizens in the nation and world. The department of Education carried out "White Paper on Creativity Teaching" to emphasize it's significant. Creativity Teaching means teachers achieve the educational aims by designing and employing the novel, original, or new teaching methods. It will help students learn each knowledge and abilities. (Ya-ling, Wang, 2002)

The physical education pays more attention to the sports skills traditional in Taiwan, and most of physical education teachers' teaching methods are lacking of creativity teaching, because of according to the text books completely.(Yan-jun, Chen, Xiu-fang, Cai, 2004) Besides teaching the sports skills, teachers guides students combine living experience and environment to integrate other subjects during health-physical education, it will motivate students' interesting and help them get involved in the variety teaching phases to construct and learn other subjects' knowledge. It will carry out the integrated courses teaching, and make Health-Physical education be more emphasized.

Bicycle sport which was carried out by department of education recently is the economical and environment-friendly, and many county governments built bicycle lane to develop the leisure and tourism industry. This study will explore the concepts and theories of creativity teaching in health-physical education, and integrated life education, environment, science, social, art and humanity learning fields by bicycle teaching plan. Through the plan instructs students the correct sports concepts and other subjects' knowledge, and get involved in leisure activities with family to achieve the aim of creativity teaching in healthy-physical education. .

Key words: creativity teaching, nine-year integrated education, integrated courses.

用教育性戲劇培養創造力—探討戲劇與創造力教學的關係

Fostering Children's Creativity through Drama in Education-- the creative pedagogy in drama in education

Yu-sien Li

University of Exeter

戲劇教育與創造力有著密切的關係，不論是透過劇場表演培育美感的教學形式，或是融入主題式的跨科目教學，創造力總在戲劇的有趣過程中，不知不覺地紮根於孩子的思考模式與生活中。

There seems to be a strong relationship between drama and creativity. One may even doubt that ‘can drama be non-creative’? Indeed creative ideas or works often occur unexpectedly during the drama process without any foresight or teacher’s predetermination. However, perhaps more than a “serendipitous relationship” (Gallagher, 2007), I would argue it is due to drama’s nature and its approaches employed in the learning process that drama has an undividable relationship with creativity.

Cultivating children’s creativity is often referred to as one of the educational objectives of drama, though few make explicit what kind of creativity and how it is learnt through drama. In his research of understanding the relationship between improvisation and everyday creativity, Lemons (2005) puts forward a valuable framework by analysing parallel links between each improvisation elements (communication, safety, risk/challenge, expression, and self-actualization) and the ingredients for creative development (creative press, person, process, product, and purpose). In this paper, I would build on this frame to look at the unique approaches that drama offers to nurture the creative qualities, and more important, to examine the relationship in an educational setting where the context, teacher, and pupils all play a role to the development of everyday creativity. Two common approaches of drama (story and role-play) will be explained, as well as the two magic ingredients: imagination and improvisation. I will then explain further on the unique context of drama—the dynamic process and psychological safe environment that enable children’s development of problem-solving skills, possibility thinking qualities, and social creativity. And finally, the specific pedagogical strategies in drama that echoes the elements of creative pedagogy will be looked at. For drama not only employs imaginative, flexible and innovative techniques, but also involves effective pedagogical strategies to foster children’s creativity. It includes the features and focus of both creative teaching and teaching for creativity.

By examining the nature and elements of drama (e.g. the unique approaches, social context, drama teacher’s ethos), I draw a picture to illustrate how different dimensions of drama work together to foster children’s everyday creativity. Hope this paper provides rationale for those who are enthusiastic in facilitating learner’s creativity through drama and who are eager to expand their repertoire of creative pedagogical strategies.

場次：B-5

高雄場

場次 C

KAOHSIUNG

SESSION C

Big Six 資訊問題解決歷程培養創造力成效之研究

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高雄縣教育處

摘要

培養創造力的可行性方法之一是獲得有效的資訊供應，而其供應的程度有助於對創造力的培養，創造力的培養就是一種發現問題和解決問題的歷程，由於現今網際網路所能提供的資訊是動態的、具有有關聯性的、難以控管的、延伸擴展的以及立即可獲得的，因此，並非每一項網際網路上的學習材料都是適合解決資訊問題。此外，學生對於理解、評估、組織和整合在網路上所擷取的資訊是有困難的，學生需要一個系統化的資訊問題解決學習技巧，以訓練學生如何有效使用網路資訊。

由 Eisenberg 和 Berkowitz 所提出的大六教學法(Big Six Skills)，針對 K-12 的課程內容提供系統化的資訊存取技巧，其主要的六大學習步驟為：(1) 定義問題(Task definition)；(2) 資訊查詢策略(Information seeking strategies)；(3) 找尋和查詢資訊(Location and access)；(4) 利用資訊(Use of information)；(5) 整合(Synthesis)；(6) 評鑑(Evaluation)。大六教學法是一種資訊問題解決技巧，從發現問題和解決問題歷程中，同時也是一種創造力展現的歷程。

因此，本研究選取高雄市某國小五年級學生 98 位，並參照其自然與生活科技領域的學習成就分為高分群、中分群、和低分群，運用 Big Six 以網路為資源蒐集相關資訊協助自製樂器過程中，培養其創造力與科技創造力，並以 Williams Creative Assessment 為創造力評量工具，探討學生在流暢力、變通力、獨創力和精密力的訓練成效差異，其研究結果如下：(1)ANOVA 檢定，各分群於前測均無顯著差異，三分群的獨創力與精密力在後測則有顯著差異；(2)t 檢定，各分群於實驗教學前後，在變通力、獨創力與精進力方面，其成效均獲得顯著的提升；(3)ANCOVA 檢定，在獨創力方面，高分群所獲得的提升成效顯著優於低分群；(4)各分群之科技創造力訓練成效上，在流暢力、變通力、獨創力和精密力均具有顯著差異；(5)創造力與科技創造力之訓練成效具有顯著相關。

關鍵字：Big Six Skills、創造力、科技創造力、資訊問題解決模式

The Effect of Fostering Creativity in the Information

Problem Solving Approach: the Big Six Skills

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Abstract

The power behind the creative ability is partially depend on its availability as supplied by the information resources and then the creativity was fostered. However, the information provided via Internet is multiform. But, not all the information in the Internet was suited for fostering the creativity. There were a few difficulties to students on recognizing, evaluating, organizing, and integrating the information in the Internet. Hence, a systematic approach with generalization process was a need in training students to use the Internet as their information resources.

The Big Six Skills proposed by Prof. Eisenberg and Prof. Berkowitz offered a systematic alternative to traditional K-12 course frameworks that focus on location and access information skills. The six steps were: Task definition, Information seeking strategies, Location and access, Use of information, Synthesis, and Evaluation. This study was sampled ninety-eight fifth grade students and they were divided into high score, middle score, and low score according to their academic achievement in science and technology. The purpose of this study was to investigate the effects of fostering creativity in making a self-made instrument with the Big Six Skills approach. The Williams Creative Assessment was used as the pre-post tests to assess the creative ability of fluency, flexibility, originality, and elaboration of students.

The results were as follows: (a)by ANOVA test, there was significant difference on the creative ability of originality and elaboration among the three groups in posttest; (b)by t test, there was significant difference in the promoting effects of the creative ability of flexibility, originality, and elaboration in every group; (c)by ANCOVA test, the promoting effect of high score was significant difference from the low score; (d)by ANOVA test, there was significant difference among the three groups on the technological creative ability of fluency, flexibility, originality, and elaboration.

Keywords: Big six skills, Creativity, Information problem solving, Technological Creativity

以創意積木激發大學生創造力之教學模式建構與教學成效初探

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本研究旨在建構以創意積木體驗式課程激發大學生創造力之教學模式，並探究其教學成效與影響教學實施之相關因素。研究對象為某大學選修創意學程「LOWE 創意積木」課程的學生，合計 23 位。課程設計包含創意觀摩、創造體驗與創新應用三大部分，學生透過實際操作、同儕互動及引導小朋友玩創意積木等過程學習。資料來源包括創意經驗量表、學生學習檔案評量、教學歷程記錄及教學者研究手札等，資料分析旨在瞭解大學生的創意學習經驗及其對個別學生創造力認知、技能和態度的影響，並探討大學生對陌生領域知識的探索過程、激發其創意經驗與創造力的相關因素。

研究結果發現大學生從對新學習一開始的害怕(例如：對積木組裝的畏懼、兒童創意積木陪玩的恐懼)，隨著創意積木課程中創意經驗的增加，大學生對創造力的認知和態度均有正向改變，其積木作品之創意表現亦隨之提昇。本文將描述本創造力教學模式之設計與實施，分析大學生在本模式中的創造力學習與轉化經驗，進而提出對於提昇大學生創造力之有效教學策略與班級經營之建議。

關鍵字：大學、創造力教育、創意經驗、體驗學習

Session : C-1

王映人 No Provided

創意產品共識評量的信、效度之析論

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摘要

台灣自 2002 年頒布《創造力教育白皮書》開始，創意人才的培育與創意評量模式之建立已成為當前創造力教育推動的核心。目前有關創意產品評量的方式，大都透過多位評分者對創意產品進行主觀評比，經檢視評分者間的一致性後，決定創意產品的等第。然而，此種共識評量方式，因建立在古典測驗理論的基礎上，且未考量主觀評量過程中可能產生的評分者效應，就發展一個客觀、有效的創意產品評量技術而言，似乎仍有改善的空間。

基於此，本研究經由創意產品共識評量之相關文獻的回顧與評析，歸納出當前創意產品共識評量所存在的信、效度問題，包括：(1) 使用 Cronbach's α 係數進行評分者一致性分析，導致評分者信度會因創作者能力分佈以及評分者人數多寡，而呈現不穩定的現象；(2) 多數的研究僅以領域專家在「整體創造力」評量指標上的共識程度，做為效度之依據，缺乏創造力概念的聚斂效度與區辨效度之檢核；(3) 忽略主觀評量過程中評分者效應所造成的評量誤差，以致相同專業背景的評分者，在不同的研究結果所呈現的評分者一致性存有相當的差異。最後，本研究以試題反應理論的 Rasch 多相模式觀點，針對上述的問題，提出未來研究的可行方向，期能增進創意產品共識評量技術的改善與評量品質的提升。

關鍵字：創造力、共識評量技術、Rasch 模式

A Review of the Reliability and Validity of the Consensual Assessment for Creative Products

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Abstract

Since Taiwan Ministry of Education declared White Paper on Creativity Education in 2002, cultivating creative talent and establishing models for creativity assessment have become the core elements of promoting creativity education. Most of current ways in assessing creative products often involve a process of inviting several raters to subjectively rate creative products, and then deciding the rank of the products after obtaining inter-rater consistency. However, this consensual assessment is based on classical test theory and doesn't consider raters effects that may occur during subjective assessing process. There is still room for improvement in developing objective and effective assessment techniques.

Based on this, the study reviewed related literature on consensual assessment of creative products and generalized problems of reliability and validity in current consensual assessment of creative products. These included (1) problems of unstable rater reliability caused by creators' ability distribution and rater's number when Cronbach's α was used to analyze rater reliability, (2) problems of lacking examination of convergent validity and discriminant validity in creativity concepts when most researches only used domain experts' consensual level in overall creativity as the basis of validity, and (3) problems of ignoring measurement errors caused by raters' effects during subjective assessing process, resulting in great differences of rater consistency for raters of the same background in different research findings. Finally, focusing on the previous problems, the study proposed a feasible direction from Multi-facet Rasch Model in Item Response Theory for future studies in the expectation of improving consensual assessment technique of creative products and elevating the quality of assessment.

Keywords: Creativity, Consensual Assessment Technique, Rasch Model

創造力教育的藝術與實務研究—以環保肥皂爲例

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摘要

爲順應全球性經濟型態的改變，迎接知識經濟時代的來臨，台灣乃將提升「創造力」列爲主要的國家發展策略，希望爲國家的下一代培養其創造力與創新能力，以厚植國家與個人競爭力，藉由提昇國民素質，成爲發展知識經濟之前提。近年來由教育部與國科會所支持的研究案中，有許多與創造力相關的計畫，涵括了內涵、課程教學及教材研發等範圍。接著在 2002 年元月公布「創造力政策白皮書」，提出「打造一個創造力的國度」的願景，全力實施創造力教育。培養學生創造及實踐的能力，促使學習者在動態的環境中仍能主動學習，在學習中得到快樂，在求知中成長，乃是時勢所趨。

臺中縣大里市立新國民小學在響應教育部地方創造力教育計畫下，努力發展包括創意教師、創意學子、創意校園、創意智庫及跨領域等五大主軸的創造力教育計畫。本研究歸屬於跨領域特色的範疇，以回收油製造肥皂的環保概念爲題材，所規畫的專題式統整課程。其依序推動實施包括「創意教師傳藝研習」、「創意學生腦力激盪」、「創意校園藝廊櫥窗」及「環保肥皂衛生健康」等內容，期能達成「環境永續美化人生」的理想。

綜合計畫實施的結果，總結發現如下：

- 一、課程設計的核心，融入九年一貫的課程領域。如：自然與科技領域--皂化、酸鹼值，數學領域--比例、計算，藝術與人文領域--雕刻、鑄印，健康與體育領域--衛生保健，社會領域--環境保育、永續發展。
- 二、推廣研習與教學活動頻仍。辦理校內外教師相關研習活動 4 場，培訓教師 200 人次，進行相關教學活動教導學生達 2,000 人次。
- 三、發展課程數量爲數可觀。累計自然與科技領域—3 件，數學領域—2 件，藝術與人文領域—3 件，健康與體育領域—1 件，社會領域—1 件，總計發展各領域課程數達 10 件之多。
- 四、節省學校經費經濟又實惠。校園推廣學生清潔洗手活動，需購置大量的香皂或清潔液，對於學生人數眾多的都會型學校負擔沉重。回收油肥皂製造簡便且成本低廉，可大量生產充分供應全校師生使用，不虞匱乏省錢又實惠。
- 五、班級實務應用廣泛。回收油肥皂不僅供應全校師生潔手衛生之用，且結合美術課程之雕刻單元，啓迪學生的創意發想，成品亦可作爲校園裝置藝術的展示品，而雕刻拋棄的殘屑，亦可回收溶解再製成環保清潔液，供班級清潔地板使用，確可達到零污染、零廢棄的境界。
- 六、潛在課程的效益宏大。不僅培養學生永續校園、環境保護的概念，且將減少廢油垃圾與降低廢油污染的概念，由學校透過學童推廣至社區家庭，達到宣導的實質效益。

創造力教育的精神乃在於激發「創新」與「有價值」的知識，所以深化學科教學，發展學校本位課程，教導學生帶得走的能力與廣泛的生活經驗，就成爲重要的目標。今以立新國小爲場域，所推動之「回收油肥皂計畫」，在「2008 國際創造力教育博覽會」引起國內外專家學者、教師及家長極大的興趣與迴響，深具研究的價值與推廣的意義。希望藉由經驗分享與資訊交流的機會，期能提供學校單位未來推動創造力教育相關課程計劃的參考。

關鍵字：創造力教育、回收油肥皂

The Practical Research of the Art of Creative Education on the Recycled Oil Made Soap

Abstract

In order to cope with the change of the global economies patterns, and prepare for the coming of the knowledge-based economies, Taiwan has listed the elevation of our creativity as our country developing strategy. We hope to cultivate the creative ability of our next generation so as to increase the competition ability of our people and nation as the launch of our knowledge-based economies.

Recently, among the researches supported by Ministry of Education and National Science Council, there are a lot of them related to the creative ability which included the content, curriculum, and teaching materials. In 2002 the Ministry of Education initiated the white paper on creative education, and it mentioned about creating a vision of the “Republic of Creativity” with the ultimate hope of cultivating our students’ creative ability, fostering them to learn by themselves so as to get pleasure from learning.

Li-shin Elementary School, in Da-li, Taichung, responds to the Ministry of Education creative education policy, developed the innovative teachers, innovative students, innovative campus, and innovative database. These five main frames are our school’s five creative education plans. This research belongs to the multi-curriculum field. We used the concept of recycled oil made soap as our central integrated curriculum. The procedures are innovative teachers’ seminars, innovative students’ brainstorm, innovative campus gallery windows, and the sanitary recycled oil made soap. We hope to accomplish the idea of maintaining our environment and enhancing the beauty of our life.

To summarize the above plans, the findings were as following:

1. The core curriculum included the Grade 1-9 curriculum, for example, in Science and Technology, Students can learn saponification and PH value, in Mathematics, students can learn proportionality and calculation, in Arts and Humanities, students can learn sculpture and stamping, in Health and Physical Education, students can learn sanitary and health, and in Social Studies, students can learn environmental protection and perpetual development.
2. It had extended seminars and teaching activities. We’ve held 4 seminars for teachers in our school and teachers at other schools, trained 200 teachers, and used it as a teaching activity for 2000 students.
3. It had helped to develop a number of curriculums. It has accumulated 3 in Science and Technology field, 2 in Mathematics field, 3 in Arts and Humanities field, 1 in Health and Physical Education field, and 1 in Social Studies field- accumulated 10 in total in all fields of curriculum.
4. The recycled- oil made soap had saved a lot of money for the school. It cost a lot of money to buy soap or detergent for students when school promotes washing hands activity. It could be a big economical burden for the school which had a lot of students. The recycled-oil made soap is easy to make and cost less, so it can be abundant available for the teachers and students.

Keywords : creative education , recycled- oil made

創意數位課程：英語故事教學到繪本饗宴

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摘要

本研究旨在探討創意數位英語繪本教學方案對國小學童創造力與英語寫作的影響。以創新（化名）國小三年級的 49 位學童為研究對象，進行八週繪本創意教學。本研究兼顧量化與質性研究，在研究方法上，使用「國小創意英語繪本問卷」為工具，並輔以開放式問卷、教室觀察紀錄、教師教學日誌等質性資料分析。在英語創作繪本教學時，教師首先以現行課程所涵蓋之「端午節」主題為架構，編成生動有趣的數位英語繪本故事，再經由「腦力激盪、小組討論、自由聯想、角色扮演」等創意教學策略，來進行教學。創意數位英語繪本課程結束後，分組讓學生進行團體英語繪本小書創作，最後進行學童創意英語小書展覽活動之繪本饗宴。本研究結果顯示，國小實施創意數位英語繪本教學：（一）有助於學童在英語創作和繪本製作過程中，具有流暢、變通、敏感、獨創、精進等創造力表現；（二）增進學童的英語寫作能力；（三）引起學童對英語學習產生濃厚興趣；（四）提高學童解決新問題的能力；（五）提昇兒童欣賞藝術和英語作品的的能力。最後，建議本創意數位英語繪本教學，值得在國小校園加以推廣。

關鍵詞: 創意教學、創造力、英語繪本、故事教學、英語寫作

Creative Digital Courseware: From English Story Instruction to Book-making Project

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Abstract

The purpose of this study is to explore the impacts of the Creative Digital English Picture Book (CDEPB) program, including creating a digital courseware, which guides students to make English stories with paintings; English book-making project, which examines the results of students' effort in making their own English picture books, showing their creativity and English writing ability. A total of 49 third graders participated in the research. Both quantitative and qualitative methods were employed to collect the research data. The findings of the study showed that the CDEPB program could promote students' creativity, including fluency, sensitivity, flexibility, originality and elaboration during the CDEPB program. Moreover, the CDEPB program could better students' English writing abilities, and would also help them develop a set of learning attitudes toward problem-solving. The results implied that the program might be therefore worthwhile to promote learners' creativity in a primary school setting, and it is recommended that the program be used as supporting material for a traditional classroom.

Keyword : Creative teaching, creativity, English picture book, story instruction, English writing

鷹架教學策略於國小音樂創作之應用

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摘要

音樂創造力的內涵一般被認為體現於音樂創作活動中的作曲、即興與編曲能力上。本研究以其中的作曲為主要研究範圍，根據鷹架教學策略、音樂創造力、作曲等相關文獻，透過個案研究的方式，解析鷹架教學策略應用於國小音樂創作之學生觀點。

本研究之研究對象為台北市某所國民小學五年級的一個班級，兼納質、量化之資料蒐集與分析。研究者首先透過文獻之探討，探究國小學童作曲學習之可行鷹架教學策略，歸納出「成品示範」、「多元化音樂欣賞」、「評分規準」三種教學策略，進行為期十八節課的教學實驗。

成品示範係指老師示範兩種以上與學生作曲任務相同的作品供學生參考；多元化音樂欣賞指讓學生欣賞與作曲任務相關而非相同的作品，藉以擴充學生音樂想像之層次；評分規準乃研究者自編之評量工具，以學習單的方式呈現，採多標準搭配雙或多等級的方式，以提供師生溝通音樂創作之方向與重點。在學生作曲表現相關資料之蒐集上，前、後測檢視學生之個別曲調即興創作表現，教學實驗中則讓學生完成個人及小組節奏創作、小組之節奏與填詞創作、個人之曲調創作等。

本研究之結論如下：(1) 成品示範之鷹架教學策略能使學生易於模仿及進行音樂創作，但須視學生之特性而提供適切之示範，對於保守謹慎的學生而言，有時過多的示範會限制了學生創意想像的空間。(2) 多元化音樂欣賞之鷹架教學策略能激發學生的創意以及創作的靈感；使用學生熟悉、喜愛之音樂欣賞曲目，尤其能提升學生學習創作之興趣與動機。(3) 評分規準之鷹架教學策略能幫助學生於創作時有所遵循與依據，並協助他們掌握學習的重點。

關鍵詞：作曲、音樂創作、評分規準、鷹架、鷹架教學策略

The Application of Instructional Scaffolds in Elementary School

Music Creation

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Abstract

The nature of music creativity is considered to be exemplified in the creative music activities of composition, improvisation, and arrangement. This study centered its focus mainly upon composition. With the reviewed literature of instructional scaffolds, musical creativity as well as composition, this study analyzed, through the case study method, students' opinions in the application of instructional scaffolds in elementary school music creation.

One class of 5th-grade students in Taipei City was taken as the study subjects. Both qualitative data and quantitative data were collected for analysis. Based upon results of literature review, the researcher investigated feasible instructional scaffolds for elementary school composition learning. The instructional strategies of "modeling," "multi-perspective music appreciation" and "rubrics" were adopted for the 18 experimental lessons.

"Modeling" referred to the strategy that students were presented at least two teacher-produced task samples identical to students' tasks for students' references. "Multi-perspective music appreciation" allowed students to listen to compositional works that took on some similar but not identical perspectives of their composition tasks, so that students' musical imagination might be broadened. "Rubrics" were researcher-developed assessment instruments that utilized, through the format of study sheets, the multi-criterion and bi- or multi-level method to pave the way for teacher-student communication of composition focus and to work as instruments of assessments. Pretest and posttests were carried out to study students' individual melody improvisation performances, while experimental lessons included tasks of individual and group rhythm composition, group rhythm composition and lyrics composition, as well as individual melody composition.

The conclusions of this study are drawn as follows: (1) the instructional scaffold of modeling helped students to imitate and undertake the activity of music composition. It took, however, a careful observation of the characteristics of students to offer most appropriate samples. That is, for those conservative and overly cautious students, too much modeling seemed to hinder the room for their creativity; (2) the instructional scaffold of multi -perspective music appreciation helped to stimulate students' creativity and compositional inspiration. The use of music appreciation works that students were familiar with and had a liking for particularly improved their learning interests and motivation; (3) the instructional scaffold of rubrics made possible students' knowing what to look for when they worked on composition and made possible their taking hold of the points of learning.

Keywords: composition, music creation, rubrics, scaffolding, instructional scaffold

高雄場

場次 D

KAOHSIUNG

SESSION D

創意班級經營－班級公約與班級法庭的實施

郭信宏

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摘要

本研究目的是希望建立一套班級管理制度——「班級公約」及「班級法庭」，將立法權與司法權相結合，以解決班級學生的衝突及糾紛。在施行班級法庭「剛性」的制度後，再輔以「柔性」的感化教育，觸動學生內心的道德良知，由外燦而內化為自律模式。以往的相關研究曾以陪審團的方式進行班級法庭審理，但未事先制定班規與刑責，產生判定標準不一，再加上一星期開庭一次，學生的委屈無法立即處理，而本研究是將法院三審三級司法制度融入到班級法庭，更可以節省人力，小訴訟先調解，以減少案件，調解不成時，再經由班級法庭逐步申訴，形成判例以後，再來修正班級公約的缺失所在，更能符合立即性。本研究對象是以一所國小的高年級學生，進行現場觀察及深度訪談。研究的流程是 1. 案例討論；2. 宣導法律常識；3. 訂立班級公約；4. 認識法院及訴訟制度；5. 每週開班會檢討一次。最後再以評量方式提供回饋機制。研究結果顯示：（一）學生的紛爭次數減少、常規變佳、法律常識增加；（二）導師減少處理學生事情的時間；（三）增強學生反省與批判的能力；（四）班級法庭的仲裁方式解決學生的紛爭；（五）班級公約成為大家遵守的信條；（六）學生的自我管理能力增強，不僅要「管好自己的事」，還要「管好我們的事」。本研究適合應用於國小高年級的班級經營。

關鍵字：創意班級經營、班級公約、班級法庭

Creative Classroom Management: The Action Research on the Moot Court of Class

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Abstract

The study was design to establish a system of classroom management, including classroom rules and the moot court of class. The participants were elementary school students in the Taichung County. The method of the research was classroom observation and deep-in interviews. The flow chart of the research was presented. The findings of the study indicated that this action research enhanced students' self-governed behaviors and promoted their ability on self-reflection and critical thinking. The arbitration of the moot court of class had positive influence on students' self-discipline. Meanwhile, the model also reduced the amount of time and frequencies for the teacher to deal with students' arguments. The result showed that the creative project may be beneficial to the elementary classes on the classroom managent.

keywords : creative classroom management, classroom rules, the moot court of class

以領導社群的整合思維推動具創造力的學校經營

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摘要

今日學校所面對的挑戰是多面向的，成員的價值觀是多元的，若是依循傳統的偉人式領導模式與既有科層體制，組織創造力的發展將是有所限制。本文以社群作為推動創造力的基礎，期望能夠協助學校領導者尋求創新經營的途徑。建立社群的目的，即是要培養出水平的關係，而非建立資訊的階級管道，強迫成員從中捉模。同時，若將社群概念進一步運用於推動學校創造力的實務中，可架構出領導社群的整合思維，分別涵蓋：能跨越組織結構的界限，成為建立社群的領導者、應採取關懷的實際行動，促成社群之間的合作與分享並形成社群領導、重視與發展教師專業成長，經由權能的賦予來支持專業社群，而形成具有自我領導能力的社群、須正視與權衡微觀政治中的衝突及利益競逐，運用領導者社群的機制，以獲得充分資訊進行重大決策等四個向度。

關鍵詞：社群、領導社群、整合

The school management advance creativity through an integrated perspective of community of leadership

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Abstract

Today, schools had the multidimensional challenge and the diversification of staff values. The creativity of schools would be limited if still according to the model of a great man leadership and bureaucrat in tradition. This paper utilized the perspective of community to advance creativity in order to obtain the basic of innovation management. The purpose of building community would cultivate horizontal relation, and avoided to build the class of information channel to force staffs probe. The concept of community would form an integrated perspective of community of leadership, and would advance creativity in the practice of school management. The community of leadership included four dimensions: Community builder crossed organizational boundary, the caring action and cooperation and share formed communities leadership, the teacher professional development formed communities with leadership capability, and community of leaders gain information and decision-making by the balance of conflict and benefit for micro-politics.

Keywords: community, community of leadership, integration

推動創造力教育結合學校本位課程的落實

提升學校效能效果之研究

王乙婷、李佳憶

高雄市鼎金國小

摘要

創造力教育對於台灣國力的提昇及公民素質的養成，扮演舉足輕重的角色，重視學校本位課程為民國八十七年公布以學生為主體，以生活經驗為中心，保留總教學節數的百分之二十時間供學校彈性發展課程，並從九十學年度逐年實施之九年一貫課程的主要特色之一（教育部，民 87 年）。多年以來，發展與落實學校本位課程已成為學校行政人員與教師的基本能力之一，並且推動創造力教育也已如火如荼地持續進行中，但是國內研究者的研究大多以學校本位課程的發展歷程為研究目標，但到底推動創造力教育結合學校本位課程對學校效能是否有提升的效果？其效果為何？這方面的研究卻不多，而成為研究者所關心的課題，因此，本研究的主要動機，是希望藉由推動創造力教育結合學校本位課程的成果調查，了解高雄市學校在推動創造力教育結合學校本位課程的推動及實施情形和探討高雄市學校推動創造力教育結合學校本位課程提升學校效能之效果。

本研究依據研究目的及文獻探討的結果，以學校推動創造力教育的程度及學校創造力教育結合學校本位課程的程度為背景變項，而以學校推動創造力教育結合學校本位課程程度為自變項，進一步探討對依變項—學校效能的影響。本研究的目的是在探討高雄市南北區學校推動創造力教育結合學校本位課程的程度提升學校效能之效果的差異情形。本研究擬將正式施測時所得之測驗資料，經過批改、整理、建檔後，以 SPSS 視窗版統計套裝軟體進行單因子變異數分析及多元迴歸分析。在資料分析的結果與綜合討論後，研究者提出以下結論：

- 1、高雄市學校所推動的創造力教育結合學校本位課程落實情形具有普遍性。
- 2、學校推動創造力教育結合學校本位課程的落實確實提升學校效能。
- 3、高雄市南北區學校在推動創造力教育結合學校本位課程的程度提升學校效能具有顯著性差異。

關鍵字：創造力教育、學校本位課程、學校效能

A Study on the Effects of Animating Creativity Education Combined with Implementing School Based Curriculum to Promote the School's Efficiency

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ABSTRACT

Creativity education plays a very important role to promote Taiwan's national power and to develop civic quality. It is announced in 1998 that school based curriculum emphasizes on students, focuses on living experience. 20% of total teach time has been reserved to provide elastic school developing curriculum, and it has been one of the characteristics of nine-year constituency from 90 school year. Since many years passed, developing and implementing school based curriculum has been one of the basic abilities of the school's administrative staffs, and animating creativity education has been continuously proceeded like wildfire. However, most internal researcher studied on school based curriculum focusing on its developing progress for research purpose, but what on earth animating creativity education combined with school based curriculum may have the effects on promoting the school's efficiency, and how about its effects? Studies on those two aspects are not that many, so animating creativity education combined with school based curriculum has been the main topic what the researcher concern with. So this study tries to understand the circumstances in Kaohsiung of school's animating creativity education combined with implementing school based curriculum and to probe into the effects of animating creativity education combined with implementing school based curriculum to promote school's efficiency through questionnaire. The researcher has addressed the following conclusion after data analysis and integrated discussion.

1. The degrees of circumstances in Kaohsiung of school's animating creativity education combined with implementing school based curriculum is widespread.
2. Animating creativity education combined with implementing school based curriculum can promote school's efficiency.
3. The effects of animating creativity education combined with implementing school based curriculum to promote school's efficiency have the conspicuous differences between northern and southern district in Kaohsiung.

Keywords : creativity education, school based curriculum, school's efficiency

通識教育援引獎勵大學教學卓越計畫資源的藝術創作 教學－以屏東科技大學藝術鑑賞課程為例

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摘要

本文源自於教育部獎勵大學教學卓越計畫，個人於屏東科技大學通識教育中心企劃的「統整藝術教育與詩歌樂舞的教學與學習：天馬行空、集體飆創意－戀戀屏科大」視覺藝術創作活動，目的在延伸通識教育「藝術鑑賞」教學，由審美鑑賞跨向藝術創作的面向，期使學生將美感經驗與藝術創作精神融入科技的思惟領域，使通識教育的學習與藝術創造的思考充分融合滲透。

屏東科技大學「藝術鑑賞」課程，旨在以非藝術專業學生的需求為主體，廣泛由美術館/博物館、大眾所熟悉的經典藝術，提供廣及古今中外豐富的藝術鑑賞資源。教學內容廣由博物館學、美學、藝術史、藝術評論、藝術社會學、藝術心理學等多元觀點，掌握傳統與現代藝術的鑑賞特質。

鑑於國際發展創造力的教育趨勢，屏東科技大學除了「藝術鑑賞」課程之外，乃規劃一系列的獎勵大學教學卓越計畫視覺藝術演說，其中「我之為我自有我在－藝術創作漫談」，旨在鼓舞非藝術專業的學生，於審美欣賞之餘，以盡其在我嘗試創作的可能。此外，鑒於學術理論中字字珠璣式的研究與學院式精緻細膩的菁英式藝術表現，可能挫折學生的學習情緒，乃摘取現代藝術創作中較為簡化、簡易的形式，闡述其中自為自在與自由放逸的本質，激發非藝術專業學生的創作動機。

「天馬行空、集體飆創意－戀戀屏科大」藝術創作，此企劃單元旨在倡導「學生為主、教師為輔」的教學與學習理念，透過「藝術鑑賞」教學，援引視覺藝術演說「我之為我自有我在－藝術創作漫談」，以異於傳統由上而下的教學模式，啟導學生融合科技專業所學尋求藝術創作的動源，或將在園的學習生活轉化為創作的元素。

「天馬行空、集體飆創意」藝術創作活動，由學生自組作品解析團隊，發表其創作歷程，由學生組成評分團自主評量，透過創作解析與鑑賞評量的雙向學習，提供學生充分體會「學習後設思考」的機會。此外，本單元活動聯合各通識學門教師群集參與，在脫離學科考試與教學進度的限制下，能收集思廣益之效，助益於「藝術鑑賞教學後設思考」，以期全面提升學生的創造力與充實性靈的機會。

值得一提的是，此單元的教學精神旨在鼓舞學生嘗試鑑賞與創作的感通與探索，絕不以框架理論或制式成果侷限學生，強調的是學習的過程不是結果。

Artistic Creation Teaching of General Education that Applied the Resources of Rewarded University Teaching Excellence Project—Taking Art Appreciation Course of National PingTung University of Science & Technology (NPTUST)

As an Example

Chiu-chu Chen

Abstract

The dissertation originated from the visual art creation activity of “Integration of Art Education, and Teaching and Learning of Poetry, Music, and Dance: To Form an Unrestrained and Vigorous Style that Brims with Talent, and to Compete on the Originality in a Group—Life and Study in National PingTung University of Science & Technology (NPTUST)” planned by me at Center for General Education, NPTUST, and supported by the university Teaching Excellent Project, which is rewarded by Ministry of Education, with the goal to extend the “art appreciation” teaching of general education to stride from aesthetic appreciation to artistic creation, expecting students to blend the experience of aesthetic feeling and artistic creation spirit into the thought and sphere of science and technology, so that, the learning of general education and the thinking of artistic creation could fully merge and infiltrate each other.

Regarding the artistic creation of “To Form an Unrestrained and Vigorous Style that Brims with Talent, and to Compete on the Originality in a Group—Life and Study in National PingTung University of Science & Technology (NPTUST),” the purpose of this planning unit was to advocate the teaching and learning philosophy of “students as major, and teachers as auxiliary;” via the teaching of “art appreciation,” it applied the visual art speech of “I am Unique, So I Exist—A Rambling Talk of Artistic Creation,” to be different from traditional teaching mode of passing on the knowledge from a teacher to students, enlightened students’ motivation of blending what they learned from their professional field of science and technology into artistic creation, or transforming their campus life into the elements of artistic creation.

What’s worthwhile to mention is that, the teaching spirit of this unit was to inspire students to attempt comprehending and exploring appreciation and artistic creation, and never confined students with frame theory or standardized achievements; what it stressed was the process of learning but not the result.

Keywords: Originality, visual art, art appreciation, art education.

組織創新活力量表建構之發展與驗證

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摘要

組織創新與創造力的三成分理論（Amabile, 1988）是解釋組織創新績效的主要理論之一，該理論強調組織創新氛圍對組織成員的創新動機具有決定性影響。而新近發展的創新效能感理論則強調，組織成員的創新效能感能直接解釋成員的創新動機。

組織創新活力量表之建構，仍秉持組織創新與創造力三成分理論的論點，但整合組織創新氛圍與創新效能感的觀念，強調組織成員所感知的組織創新氛圍和從事創新的信心，合而構成組織創新活力；而成員所感知的組織創新活力，激發其創新動機與創造力，進而促進組織創新績效。

本研究首先增補組織創新氛圍量表（KEYS）的不足，繼而納入創新效能感的概念，用以建構組織創新活力量表。組織創新活力量表以國內研發法人為研究對象，根據第一階段信效度分析（跨組織樣本 109 份）結果，進行適度修正後，再進行第二階段信效度分析（單一組織樣本 1149 份），與驗證性因素分析。

分析結果顯示，組織創新活力量表具有良好的模式適配性，且信效度良好。這表示本量表不但是衡量組織創新活力的有效工具，也比組織創新氛圍量表更適合作為研究者與管理者衡量和診斷組織創新活力之用。

關鍵字：組織創新活力、組織創新氛圍、創新效能感、組織創新

The Development and Validation of an Organizational Innovation Vitality scale

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Abstract

The componential model of creativity and innovation in organizations (Amabile, 1988) is the main theory for explaining individuals' creativity and their innovative behavior. It emphasizes that individual creativity is the source of organizational innovation and work environment (e.g., organizational innovation climate) as well as the main determinant of individuals' motivation to innovate. However, organizational innovation climate is not the only determinant for explaining individuals' motivation to innovate. Individuals with high creative self-efficacy could also influence their behavior, motivation and performance within organizational innovation activity. This study thus based on literatures of KEYS (1996) and creative self-efficacy to develop an organizational innovation vitality scale (OIVS).

Two steps of OIVS development are reported. The first step was to employee exploratory factor analysis to find an appropriate factor (n=109, from three different national research councils). The second step was to use confirmatory factor analysis to test the fitness of different factor models (n=1149 from one national research council). Internal consistency and criterion related validity were also analyzed at each step. Test results indicated that OIVS had acceptable reliability, validity, criterion-related validity, and a ten-factor model of OIVS was provided satisfactory fit. Thus, OIVS is a validated instrument for scholars and patricians in accessing the perceived work environment for organizational innovation.

The contribution of this study is to propose and validate a new scale for accessing the perceived work environment for organizational innovation. By updating the concept of organizational innovation climate and adding the creative efficacy, OIS enriches and goes beyond the concept of KEYS. More researches are needed to validate our argument and findings. And the role of workload in explaining creativity and innovation in organizations should be explored further.

Keywords: organizational innovation vitality, organizational innovation climate, creative self-efficacy

不同層次之自我效能對個人創造力之影響－以創意市集工作者為例

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摘要

21 世紀是創意經濟的時代，創意成爲企業及國家因應快速變動時代的關鍵因素。從 1997 年英國開始，許多國家逐漸重視創意文化運動的推行，時至今日，創意文化產業已成爲全球最重要的產業之一。2002 年台灣也開始將「創意台灣」規劃爲未來施政的目標與願景。在創意理念的交流中，「創意市集」是文化创意產業中新興的交流模式，爲創意工作者提供多元化的創作交易平台，推崇個人創造與精神創新。

創意市集的工作者，投身於他們有興趣的事務上，用作品彰顯內在的自我與創意，更重要的事，他們相信自己有能力去從事創作。這種創作者對自我能力的信念，依據 Bandura 的社會認知理論，認爲個人、行爲及環境之間會有相互的影響，而自我效能扮演重要的核心角色。事實上，自我效能是個體對於自己達成某種行爲的能力信心，隱含人類對結果的預期。由於創造力是人類最崇高的表現之一，且自我效能是個人創意生產力的必要條件。並且，自我效能是個人創意活動中重要的動機因素。因此，自我效能在個體創造力的展現上，是一個相當重要的促成因素。

有鑑於此，本研究著眼於探討不同層次的自我效能，提出一般性的自我效能(包括察解問題自我效能、恢復力自我效能)，以及特定性的自我效能(包括情緒自我效能、任務自我效能和創意自我效能)。再者，由於創意市集的創作者是一個新興的創造力展現型式，對於這類型的創作者之創造力研究尙少。故本研究以創意市集的工作者爲研究對象，探討多層次自我效能對於個人創造力表現的影響。

本研究以田野調查法，共發出 298 筆資料，回收 242 筆資料，扣除無效問卷後，有效樣本數爲 241 筆資料，有效回收率爲 80.9%。研究結果發現，五種不同的自我效能間具有層次關係，且一般自我效能中的察解問題自我效能和恢復力自我效能，會正向影響三種特定自我效能(情緒自我效能、任務自我效能和創意自我效能)。在特定自我效能中，任務自我效能及情緒自我效能會正向影響創意自我效能。最後，透過創意自我效能正向影響個人的創造力表現。而研究發現的意涵與貢獻及限制將於本文中詳細說明。

關鍵字：創造力、創造力表現、自我效能、創意自我效能

A Study Of Multi-Level Self-Efficacy and Its Impact on Personal Creative Performance

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Abstract

The 21st century is called the era of creative economy; the concept of creativity is seen as the key factors responding to the rapidly changing enterprises and countries. Since 1997, the Great Britain and many other countries began pursuing the movement of creative cultural, consequently, the creative culture industry nowadays have become one of the most important industries in the world. Recently in Taiwan 2002, the theme of "Creative Taiwan" is treated as the new vision in planning the future government. And fashion market is a new mode of creative cultural industries, which provides a platform for creative interaction, and encourages personal creative spirit.

The creators of fashion market are those who are interested in pursuing creative activities, expressing themselves through their creations, the most important, they believe they have the capabilities in engaging creative activities. Based on the social cognitive theory, personal, behavior and environmental factors are three reciprocal determinants, among the dynamic interaction, individuals conduct is motivated and regulated mainly by ongoing exercise of self-efficacy, and the concept of self-efficacy can vary across activities and situational circumstances. While creativity is the sublime human performance, self-efficacy is the necessity of creative production.

This study aims at exploring multi-level of self-efficacy, including general self-efficacy (which consists of awareness/problem solving self-efficacy and resilience self-efficacy) and specific self-efficacy (includes emotional self-efficacy, tasks self-efficacy, and creative self-efficacy). The population of this study is those creators of fashion market. Consequently, the purpose of this study is to explore how the individuals' multi-level self-efficacy may have influence on their creativity performance.

A survey is conduct to a total of 298 fashion market creators, resulting in 241 valid samples, for an overall response rate of 80.9%. The results show that the five kinds of self-efficacy exhibit a multi-level relationship, and the creative self-efficacy has demonstrated a positive impact on individuals' creative performance. The implications to academics and business are discussed.

Keywords: Creativity, Creative Performance, Self-Efficacy, Creative Self-Efficacy

社區大學工作者創造力培育之研究

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摘要

爲因應社會急遽變遷，各種知識不斷推陳出新，成人重新投入學習，各社區大學紛紛加入成人教育提供的行列，擔負起各項成人教育的規劃與推展工作，使成人學習者能從各機構所提供的各項活動中獲得所需的知識與技巧，以因應其工作上、興趣上、休閒上之需要。隨著世界潮流的趨勢，我國社區大學的設立爲台灣終身教育的提倡與學習社會的建構提供一個改革藍圖，並具體在各縣市逐漸蔓延。社區大學的推動設立是要創造一個新型態的大學教育，建構平民化的高等教育場域，並配合社區總體營造的需要，以實踐公民社會的教育功能。然而，處在人口少子化及教育資源越來越有限的今天，社區大學不能抱持「以不變應萬變」的心態經營，否則將會被時代所淘汰，這絕非危言聳聽之詞。因此，不管是社區大學領導者、行政人員或教師，應共同思考機構未來有效的經營策略。社區大學創新經營，不僅是一種理念的倡導，更是一種行動的實踐。透過正確理念的引導，落實在實際社區大學環境中，讓社區大學經營更具績效與特色。社區大學創新經營不能流於閉門造車式或土法煉鋼式的改變，它必須建立在知識基礎之上，才能讓創新的轉變得更好的效果。綜合上述，社區大學的創新經營有其重要性之外，當社區大學所有知識工作者皆能充實自己的知識創新，透過適當的機制培育所有工作者的創造力，自能反應於他的日常工作內容上，促進社大的創新經營。因此，本文以社大工作者的創造力培育爲題，首先利用相關文獻的討論、社大過去十年研討會主題的探索，續利用文件分析法以及訪談法了解目前社大對於工作者有關於創造力培育的現況，最後針對工作者創造力培育提出具體建議與做法，希冀引起相關社區大學工作者的共鳴，共同爲社區大學未來創新發展而努力。

關鍵字：社區大學、創造力

A study of creativity education for community universities' workers

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Abstract

Lifelong education is recently emphasized for future education. A community university conspicuously develops for accommodating to the fast change of society and knowledge, and adult relearning. Thus, the education organization should vary the management. At the same time, leader, staff and teacher have to look for efficient management strategy. Therefore, innovation management is one of the solutions. We believe that a community university will have a great achievement if the organization can take advantage of the enterprise innovation management strategy, and merge its own objective and asset. As a result, the innovation becomes the tendency of adult education. A community university innovation management is not only an ideal but also a real action. Putting this idea to practice makes adult education organization more efficient and more characteristic. The research is to make people be acquainted with status of adult education organization and share their experience, in order to draw a picture of matters, means and phases of a community university creativity education. Based on successful experience, we will choose several a community university as seed and research targets and take down progresses and outcome of such organizations. Continuously, we are going to spread a community university creativity education around by holding seminars to move up academicism.

Keywords: Community University, Creativity

社會學習領域的創意教學活動

一以遊戲進行教學創作之行動研究

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摘要

本研究主要讓師資生創造以社會學習領域課程內容為基礎之遊戲教學創作，並透過微型教學與教室現場實地教學等方式驗證其遊戲創作之可行性並加以修正之。其研究目的在於：一、希冀開發若干遊戲教學與遊戲評量的活動，希望所開發的遊戲教學與遊戲評量活動可做為國小教師教學之參考依據。二、瞭解師資生創作以遊戲方式為主之社會科教學活動的歷程。本研究主要採用行動研究作為主要研究方法論，行動場域為筆者本人所授課之「社會學習領域教材教法」與國小五、六年級教室。研究結果發現：（一）在社會學習領域中應用遊戲教學有助於師資生創造力的提昇；（二）國小學生對於遊戲教學應用在社會學習領域中大多數呈現高度的接受度（三）師資生創作社會學習領域遊戲教學最大的困難在不同類型的小遊戲如何在大單元中前後串連成統整的大遊戲與遊戲規則的完整性（四）設計遊戲教學有助於師資生對教學信念的提昇與自我概念的提昇（五）師資生國小教室的現場實地進行遊戲教學有班級秩序管理上的困擾。

關鍵字：創造力教學 遊戲教學 教學設計 創意教學 社會學習領域

Creative Teaching in Social Studies: An Action Research for applying games in instructional design.

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Abstract

The purposes of this study are to develop some games as teaching activities in social studies and to investigate how students studying teacher program create games. The method of action research was adopted and there is ongoing active engagement where the researcher has an advisory role. After the games developed, there were a microteaching activity and teaching activity in real classroom in elementary school. Results of the action research conducted indicate that creating games as teaching activities in social studies improve creativity, teaching belief and self-concept of students studying in teacher program. However, they have the difficulties in integration with games as a big coherence game during the process of design, as well as classroom management during the implement of game. In addition, most elementary school students like games applied in learning social studies.

Keywords: creative teaching social studies instructional design game

創造思考教學在國小造句教學中之應用

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摘要

在現行國小課本的每一課國語習作中，幾乎都會出現造句練習，相較於生字與造詞練習，造句練習的難度一下提昇不少，但大部份的學童在急於想要完成作業的心態下，常出現抄課本、能短則短.....等敷衍的學習態度。所以，如何引導學童寫出內容豐富又新穎的句子，是研究者長期想要解決的語文科教學問題。

創造思考教學提供研究者一個全新的教學思考方式，本研究主要以威廉斯(F.E. Williams)創造思考教學中的矛盾法、變異法、習慣改變法、容忍曖昧法、直觀表達法、創造性傾聽技術等六種思考方式，探討此種教學對學童在造句總字數、用字能力、使用標點符號能力、造句商數上有無明顯提昇！

本文主要教材以國語課本為主，研究對象為研究者自己所帶的班級(四年級)，以準實驗研究法得出四項結果：「威廉斯創造思考教學」對學童造句總字數有顯著差異；「威廉斯創造思考教學」中的習慣改變法對學童用字能力上有顯著差異；「威廉斯創造思考教學」對學童使用標點符號能力上無顯著差異；「威廉斯創造思考教學」中的習慣改變法對學童之造句商數有顯著差異。

關鍵詞：創造思考教學、威爾斯創造思考教學、造句教學

The Application of Creative Teaching for Sentence Composition in Elementary Schools

Yang, Ru May

The teacher of Tie-Shan Elementary School

Abstract

Making sentences has been difficult for students in elementary schools. And there are always many errors in their sentences.

The purpose of this research is to find how Williams creative teaching can help them. We took 19 students in the fourth grade of Tie-Shan elementary school to be our research objects and employed the quasi-experiment design. The main findings of this study were as follows:

1. Williams creative teaching has significantly contributed to the increase of the total number characters of being used.
2. Among Williams creative teaching , the examples of habit has significantly contributed to the increase of the ability of using characters.
3. Williams creative teaching has not significantly contributed to the increase of the ability of using punctuation.
4. Among Williams creative teaching , the examples of habit has significantly contributed to the increase of the syntactic quotient.

Further to the conclusion , several suggestions were presented as a guide to the application of Williams creative teaching on the fourth grade and to the reference of further development of the related field of research.

Keywords : creative teaching Williams creative teaching sentence composition

「眼見為憑」？探究幼兒觀察力發展之歷程

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摘要

本研究目的在於：觀察幼兒運用數位相機參與教學主題的討論時，其觀察力發展之歷程。本研究採用行動研究法，以一名大班老師和幼兒為對象。本研究結果發現：1.幼兒觀察力發展歷程有：模仿階段、求新階段和穩定階段；2.對於事物的概念，幼兒初時會確信自己所看見的情形就是對的，在團體教學後會增加其他幼兒的經驗來陳述；3.成人與幼兒所注意的焦點有差異。

關鍵詞：教學媒體、觀察力、行動研究

“To see is to believe”? The Inquiry to the progress of child observational development

Abstract

The purpose of the research is to inquiry the progress of child observational development by group discussing about the pictures which children made by themselves. The method is the action research and the participants are one teacher and 20 children about 5-6 years old. The results are: 1.the progress of child observational development has three stages—copy stage 、create stage and stabilize stage ; 2. at first, most children insist that he/she is right during the discussion ; after the picture-showing, they explain their points with others' words ; 3. the interesting points between adults and the children are different.

Key words: teaching machine, child observational development, action research

幼兒教師創造力人格特質與創造力教學行爲 之相關研究

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摘要

本研究旨在探討幼兒教師的創造力人格特質及創造力教學行爲的概況、不同背景的差異，以及兩者之間的相關。研究者以台南地區 358 位幼兒園教師為研究樣本。使用自編「幼兒教師創造力人格特質量表」及「幼兒教師創造力教學行爲量表」為研究工具。採用相依樣本變異數分析、多變量變異數分析、結構方程模式等統計方法，分析所蒐集的實證資料。結果發現：(1) 幼兒教師的創造力人格特質在中高程度。各層面創造力人格特質高低依序為好奇求知、積極精幹、想像敏銳、獨立挑戰、變通獨創。不同專業背景、服務園所規模、參加創造力教學研習經驗及專長教學領域的幼兒教師，其創造力人格特質具有明顯差異。(2) 幼兒教師的創造力教學行爲在中上程度。各層面創造力教學行爲出現頻率依序為彈性自由、合作討論、鼓勵支持、評量動機、挑戰獨立。不同年齡、專業背景、任教班級、服務年資、服務園所規模、參加創造力教學研習經驗的幼兒教師，其創造力教學行爲具有明顯差異。(3) 結構方程模式徑路分析發現，徑路係數 $\gamma=.60$ ，解釋力達 36.4%。顯示幼兒教師的創造力人格特質，的確顯著影響其創造力教學行爲，其中對鼓勵支持及合作討論影響最大。根據研究結果，本研究提出幾點建議，供幼教實務及未來研究作參考。

關鍵詞：創造力人格特質、創造力教學行爲、幼兒教師

The Relationship between the Creative Personality and Creativity Teaching Behavior of Preschool Teachers

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Abstract

The purpose of this research was to explore the status of preschool teachers' creative personality and creative teaching behavior, difference of various background teachers' creative personality and creative teaching behavior, and relationships between the two factors. Samples were 358 preschool teachers in Tainan area. The data were collected by "Preschool Teachers' Creative Personality Scale" and "Preschool Teachers' Creative Teaching Behaviors Scale" which were designed by researchers. The findings were as following: (1) in creative personality, preschool teachers scored above average. The highest was curiosity and knowing, and the lowest was flexibility and originality. The teachers of various backgrounds showed obviously different in creative personality; (2) in creative teaching behaviors, preschool teachers also scored above average. In frequency of creative teaching behaviors, the highest was flexibility and free, and the lowest was challenge and independence. Also, teachers of various backgrounds showed obviously different in creative teaching behaviors; (3) Teachers' creative personality influence their creative teaching behaviors. According to the findings, suggestions were proposed for the early childhood teachers, schools, educational authorities and also implications for further research.

Keywords : Creative Personality, Creativity Teaching Behavior, Preschool Teachers

健康與體育課程創造力教學探討一

「獨輪車」教學融入舞台劇演出

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摘要

我們常在馬戲團裡看到小丑騎獨輪車表演，搏得滿堂喝彩；直覺認為：小丑的平衡感一定特別好，經過長期的訓練才學會，一般人可能學不來。獨輪車運動是種特殊技能嗎？還是人人都具有的基本能力？相信從學校多位學生，無師自通學會騎獨輪車的事實看來，應該是人人都有能力騎獨輪車。就像騎腳踏車一樣，只要你肯學，就能具備這樣的能力。

獨輪車是一項新興的運動項目，它可以集運動、娛樂、健身於一體，世界上許多已開發國家的學生普遍會騎獨輪車。日本早在 1987 年就將獨輪車項目列入學校體育課程。美國、德國、英國等已開發國家，基本上在中小學教學大綱中都選用獨輪車為體育器材。但是，反觀國內的體育教學活動，獨輪車的推廣教學在校園中很少會被重視，因之，更值得加以研究與探討。

屏東縣廣安國小推展「獨輪車」教學活動，結合九年一貫課程中健康與體育領域與藝術與人文領域，統整並落實於地方創造力教育成果，蓬勃發展，有聲有色，學生快樂學習，健康成長，並且寓教於樂，有極高之學習動機與成就感。根據九年一貫課程統整與多元的精神，研究者所服務學校的行政與教學團隊，在領導者周金輝校長的重視與全力支持之下，試圖統整健康與體育與藝術與人文的教學領域，突發奇想將「獨輪車」教學與舞台劇結合，試圖打破傳統，將「獨輪車」運動結合「力」與「美」，讓學童在舞台上透過騎乘獨輪車並且結合肢體與動作的精采動態表演，活躍於舞台上，展現學生的肢體藝術之美。

本研究旨在探討以健康與體育課程創造力教學－「獨輪車」教學應用於國小校園之中，並結合設計發展成為舞台戲劇精采演出，配合教育部推展地方創造力教育，並經常應邀各大活動演出，過程精采，屢次經媒體報導，頗獲好評，並建構成為學校品牌特色，遠近馳名，家喻戶曉，充分發揮紫牛效應，成為學校經營管理中非常鮮明的學校特色。

- 壹、 前言
- 貳、 健康與體育課程與創造力教學
- 參、 「獨輪車」物理分析
- 肆、 「獨輪車」教學與戲劇之結合－舞台劇〈哪吒鬧東海〉
- 伍、 如何以「獨輪車」教學結合創造力教育建構學校品牌特色
- 陸、 結語

關鍵字：

創造力教育 獨輪車 學校品牌 舞台劇 哪吒鬧東海

**An investigation into Teaching creativity
in Health and Physical Education Curriculum---
the integration of Barrow-riding teaching into Drama**

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Abstract

The astounding performance put on by clowns at the circus leads people to presume that these clowns may have better sense of equilibrium than we do and they must have been taking long term training to learn to ride the barrows. However, is it really a talent? Or, is it the basic ability that everyone possesses? From several cases that many students learned to ride barrows without a teacher, I assume that people should be able to ride barrows. It's similar to the situation of riding a bicycle. You will be able to do it, as long as you are willing to learn.

Barrow-riding has become a new sports event. It can be used as exercise, entertainment or body-building, and students in many developed countries around the world have learned to ride the barrows generally. In Japan, it has been adopted into school physical education from 1987. In addition, many primary and high schools among these developed counties, such as U.S.A., Germany and U.K., choose barrow as one of the sports equipments in their syllabus. Nevertheless, barrow-riding teaching doesn't get much attention here in Taiwan in the field of physical education. As a result, that's why it needs to be discussed.

The barrow-riding teaching activity in Guang-an Elementary School in Pingtung County has integrated the fields of Health and Physical Education and Arts and Humanities of Grade 1-9 Curriculum, as well as Creative Education. It aims to carry out the local creative educational development, and to help students to learn happily and grow healthily. It is not only entertaining, but highly motivating as well for students. Based on the rationale of curriculum integration and diversification of Grade 1-9 Curriculum, the team that I work on with has been strongly supported in both administrative and teaching domains by principal, Mr. Zhou Jin-hui, tries to combine the fields of Health and Physical Education with Arts and Humanities. We came up with the idea of associating barrow-riding teaching with drama to break the boundaries between them, and to put physical strength and aesthetics together. By performing the play on the stage, students will be able to show the beauty of body and action.

創造力研究之回顧：心理學門(1996~2006)

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摘要

近年全球掀起對「創造力研究」的重視與投入，然「創造力」並非新鮮的名詞。心理學門是最早關注並主導對創造力的研究，自從美國心理學會新任理事長 Guilford 於 1950 年年會大力呼籲重視對創造力的探討後，創造力研究日漸受到心理學者的重視，經歷半世紀的努力，終能開花結果。知名學者如 Csikszentmihalyi 與 Runco 並曾獲得國內管理學術單位邀請來台講學。

本研究運用國內大學圖書館常見的資料庫—SSCI(WOS)與 ProQuest，以「creativity」與「creative」搜尋論文題目，找出 1996~2006 年間以創造力為名的期刊論文。經由反覆討論之篩選過程，將超過 10000 篇的期刊論文，逐步縮小至 1966 篇，涵蓋心理、管理、教育、經濟、社會、醫學等相關學門。其中，出自心理學門的期刊論文共有 708 篇。本研究依這些論文的發表年度、研究議題、方法、類型與研究對象五個面向，進行分類與回顧，最後並將以分析所得結果與當前國內創造力研究的思潮進行對話。

初步分析發現：(一) 雖然 1996 至 2006 年間相關學門期刊的創造力論文數大幅成長，但同時期心理學門論文數無明顯差異。(二) 研究對象以個體層次為主，且論文題目直接使用 Creativity，少用 Creative。(三) 認知心理學為創造力研究的重要理論基礎，創造性認知過程是各種形式創造力的基礎，以往它常以洞察力與概念延伸、新知識、概念連結、創造性心像成為討論議題，進行論述、比較與影響因素的探討。(四) 心理學門所進行的創造力研究，議題可大別為三部分：(1) 生物基礎、智慧、人格、情緒或動機對創造力的影響，(2) 創造力應用（如決策、問題解決、創意思考能力），以及 (3) 評量工具發展（如創造思考測驗、字義測驗）。(五) 重要的研究議題或爭論包括：智力與創造力的關係為何？創造性思考與批判性思考的關係為何？知識與經驗對創造力的影響為何？(五) 研究者認為，個體創造力會受社會環境（組織或文化因素）的影響，但這部份的研究相對較少。(六) 目前重要的研究缺口包括：孩童創造力的發展過程為何？如何鑑別動機效能的認知作用？

本研究不但有助於吾人掌握國外心理學門近十年間的創造力研究梗概，更可為後續研究指出未來研究方向，並促進國內外創造力研究者的交流。

Session : D-4

王光燦 No Provided

儒學道統不利華人創造力發展

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摘要

香港城市大學 Elisabeth Rudowitz 指出中國古代曾有創造力輝煌時代。本文是兩千年來儒家道統與專制法統是華人缺乏創造力的文化分析。至於道統、法統為何窒息文化創造力?本文各有兩節的演繹推論,道統與法統兩者在中國運用科舉制度而強力結合、更禁制新學說、新思想創造的可能性。中國古代春秋失法統、道統下移而啓發了九流十家,清末民初法統由君主專制改建民國,道統因五四運動而攻擊儒家,社會革命和思想大論戰相繼產生,1980 年以後臺灣民主化和大陸開放改革,兩岸都走向放棄思想統制而回應現代化、全球化、民主化、創新化潮流,因而預測現代將是中國人的第二個創造時期的來臨,果然 1980 年以後兩岸的專利發明以驚人的成長率來印證此一假設。

關鍵字：華人、創造力、道統、法統

The Confucian orthodoxy against Chinese creativeness development

Abstract

Elisabeth Rudowitz in City University of Hong Kong pointed it out that there were glory days of creativeness in ancient China. This article presents the cultural analysis about creativeness lacking in Chinese, which is due to the Confucian orthodoxy and despotically legally constituted authority since two thousand years ago. And why do the Confucian orthodoxy and legally constituted authority suffocate culture creativeness? There are two sections in the article that deduce the Confucian orthodoxy and legally constituted authority both integrate with imperial examination strongly. Furthermore, they forbid the possibility of create new theories and isms. Without shifting of the Confucian orthodoxy and legally constituted authority, it was inspired Nine Branches and Ten Schools in the Spring and Autumn period; it made absolute monarchy become republic in Late Qing Dynasty and Early Republic of China; it had the orthodoxy attack Confucianism in May Fourth Movement; it produced social revolution and ideology debate sequentially. Taiwan democratized and China started to innovate in 1980s, both cross-strait got out of control by ideology and went with the stream of modernization, globalization, democratization and innovatization. Therefore, it predicts that the second Chinese creative era will arrive in present day. Just as expected, the amazing growth rates of invent patent in both cross-strait can prove this assumption.

Key word: Chinese, creativeness, the Confucian orthodoxy, legally constituted authority

Session : D-4

林子仙未提供

The Essence of Creative Pedagogy

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Creativity is celebrating a global-wide revival interest in both the academic field such as psychology, and the applied domain such as education (Craft, 2005). This global interest reflects social, economic changes and the need to raise competitiveness in globalization activities. Taiwan has also been aware of this trend of enhancing young people's creativity as social capital of the creative cultural industry (MOE, 2003). However, as a teacher in the primary school, I observed that there is a gap between the global trend of boosting children's creative capacity and the real situation in the educational system in Taiwan. Due to the different social discourse, fostering creativity may not be desirable in the classroom (Lau et al, 2004; Rudowicz, 2004; Ng and Smith 2004). In the educational context in Taiwan, creativity often rings a different tone, image, or different perceptions in people's mind, and the cultural values and educational ethos offer a distinctive classroom environment and teaching approach. In addition, there is little research on the very essence of creativity in education, or little discussion on the act of facilitating creativity through education from our own perspective. The reason to look at the essence of creativity is because a teacher's perception of creativity will deeply influence what and how he/she facilitates the students' creative development.

Therefore, in this paper, I would like to scrutinize the theoretical framework behind the "creativity in education" field nowadays— to give a picture of the promoted aspects of creativity through educational theories and insights, including process creativity, little c creativity, and possibility thinking. In addition, to provide implications of pedagogical practice in fostering creativity through education in Taiwan, I discuss the concept of "creative pedagogy", which includes three interrelated elements: creative teaching, teachings for creativity, and creative learning. These elements imply a comprehensive framework of creative teaching strategies, supportive environment, teacher's ethos, and student's learning. Principles of each dimension will be presented.

Last but not least, I will consider the issue of the aptness of adopting the creative pedagogy — the concepts and practice that is developed upon Western theories and societies. Different cultural context and social values may nurture a very different kind of thinking and attitude. When promoting the ideology and practice of creative pedagogy to our classroom, it is also important to evaluate possible conflicts and transformation. It may not necessarily be the result that all the traditional views are denied and cast away, but rather it will be an opportunity for Taiwanese and Asian teachers to re-examine what to teach, and what to believe.

以結構方程模式檢驗影響國中小教師實施創造思考教學態度之理論模式

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摘要

本研究綜合以往相關創造思考教學和教學風格之文獻，期建構一個影響國中小教師實施創造思考教學態度的理論模式，並探討理論模式內潛在變項間的相互影響情形。研究工具包括陶倫斯創造力測驗成人適用精簡版(ATTA)、國中小教師教學風格問卷、國中小教師實施創造思考教學態度問卷等。本研究以分層比例隨機抽樣方式進行，並自台灣地區的北、中、南、東四區中抽取具有代表性樣本，共計抽樣 387 名國中小教師，隨後進行相關問卷調查工作，並以結構方程模式檢驗理論模式和觀察資料的適配度。

本研究的研究結果顯示：影響國中小教師實施創造思考教學的理論模式和觀察資料大致適配。其中教師的創造力(即創意指數)會影響國中小教師實施創造思考教學態度，同時教師的創造力會透過社交化的教學風格而影響國中小教師實施創造思考教學態度，其中社交化的教學風格在教師實施創造思考教學態度中既是自變項又是中介變項。本研究最後根據研究的結果在理論的意涵上進行深入討論，並提出未來研究的建議。

關鍵字：創造力、創造思考教學態度、教學風格

The Factors Affecting a Theoretical Model of Elementary and Junior High School Teachers' Attitude toward Teaching for Creative Thinking, as Analyzed by the SEM Model

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Abstract

The purpose of this study was to build a theoretical model, based on recent research, representing elementary and junior high school teachers' attitudes toward teaching for creative thinking and teaching style, the effect of variables on theoretical model was analyzed. The research tools include ATTA, questionnaire for teaching style and attitudes toward teaching for creative thinking of elementary and junior high school teachers. The stratified random sampling method was adopted to select the teacher sample: 387 elementary and junior high school teachers from the four areas of Taiwan (north area, middle area, south area and east area) were chosen to take part. A structural equation model (SEM) was applied in order to evaluate the fit of the proposed model and collected data.

The results indicated that the theoretical model fit the observed data quite well, that teachers' creativity affected their attitude toward teaching for creative thinking, that social teaching style intervened between the teachers' creativity and their attitude toward teaching for creative thinking, and that social teaching style is both an independent and an intervening variable. Based on these study's findings, the implications for theory and practice, as well as for further research, are also discussed.

Keywords: Creativity, Teaching for Creative Thinking, Teaching Style

促進創意思考的課程設計—以 **Torrance 醞釀式教學法**

(The Torrance Incubation Model) 作為課程設計的框架

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摘要

我們在印尼雅加達一個教育機構中針對 3~12 歲的孩童進行一項研究，進而探討如何以一種教學法作為框架來設計可以發展創意思考的課程。

作為少數的創意領域教學法並以設計及傳播創意內容為目的 (Murdock & Keller-Mathers, 2002)，我們挑選由 Torrance and Safter (1990) 發展出的 Torrance 醞釀式教學法 (簡稱 TIM) 以作為更深層研究的教學法範本。

這個研究的目標如下：

1. 研究如何以 TIM 作為設計創意課程的框架。
2. 研究在 TIM 出現之前的課程規劃設計和以 TIM 為設計架構而作的課程規畫是否有性質上的差異。

研究結果顯示 TIM 應該作為課程設計的框架，並且在謹慎使用之下可拓展 TIM 教學策略的領域並保證在創意技巧領域的系統性發展。教學規劃應該著重在發展一項創意技巧並讓學生能多以此技巧作實際練習。

關鍵字: Torrance 醞釀式教學法 (TIM), 課程設計, 創意思考技巧

*由於本文作者為外國學者，逕由本辦公室特聘人員翻譯，以利中文讀者閱讀。

Designing Lessons that Promote Creative Thinking – The Torrance Incubation Model as a Lesson Design

Framework

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Abstract

A study was undertaken in an educational organization for children age three to 12 years old, in Jakarta, Indonesia, as part of its search for a teaching model to employ as a framework to design lessons that developed creative thinking skills.

As ‘one of the few teaching models in the domain of creativity whose major purpose is the design and delivery of creativity content’ (Murdock & Keller-Mathers, 2002), The Torrance Incubation Model (TIM) developed by Torrance and Safter (1990) was selected as a teaching model for further investigation. Specifically, the study aimed:

3. To study how the TIM can be used as a framework for designing lesson plans.
4. To investigate whether there is a qualitative difference between lesson plans designed before the introduction of the TIM and lesson plans designed using the TIM as a design framework

It was recommended that the TIM be adopted as a lesson plan design framework and that the TIM be used deliberately in order to expand the range of the TIM teaching strategies used and ensure the systematic development of a range of creativity skills. Lesson plans should focus on the development of one creativity skill only to allow students more focused practice in using the skill.

Keywords: Torrance Incubation Model, lesson design, creative thinking skill.

大學及學校教育在培育創造力中的角色定位；自我效能導向的發明方法

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摘要

這份研究在於檢視通往發明的自我效能，也可視為是一個在大學或是學校學生之間，通往創新解決方法且深具意義的“前導”。研究顯示，運用自我效能導向的發明方法的大學預備學校學生擁有最高就大學水平(2.75/10)，但就高中水平而言卻是最低的 (1.85/10)。在這就讀的學生對於高等教育的課程設計及教學方法是否能真正促進個人自我效能導向的發明感到懷疑。即使是擁有優秀成績 (cumulative grade point average ,CGPA)的學生們也對此表達負面看法。此外，對於這份研究中的 392 所大學學生而言，CGPA 與任何相關概念之間的關係並不具其重大意義。($\alpha = 0.05$)

就學校的高年級生而言，32%的三年級生(G3)以及四年級生(G4)展示了自我效能導向的發明。這個百分比在學生們經歷了長達一個月，高度以學生為中心並以促進創新及創意思考的訓練課程後，約成長了 50% (達到 63%)。

*由於本文作者為外國學者，逕由本辦公室特聘人員翻譯，以利中文讀者閱讀。

Role of University and School Education on Cultivating Creativity; Self-Efficacy Towards Invention Approach

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Abstract

This study examined self-efficacy towards invention, which may be considered as a significant “precursor” to innovative solutions among university and a group of school aged students. At the university level, it has been found that the mean self efficacy-towards invention was the highest in students from the university preparatory years (2.75/10) whilst being lowest amongst students at senior levels (1.85/10). The students studied here were skeptical about whether the curricula design and teaching methodologies of higher education actually promote self-efficacy towards invention in a person. They, including students with high grade point average (CGPA), expressed negative opinions about both of them. Also, it has been found that the correlation between the CGPA with any of the constructs looked at was not significant for the 392 university students in this study ($\alpha=0.05$).

Regarding the school aged students, 32% of grade 3 (G3) and grade 4 (G4) students exhibited self-efficacy toward innovation. This percentage roughly doubled (to 63%) after their participation in a one month training program which took students through a highly student-centred approach learning that aimed at promoting innovative and creative thinking.

透過看護教育中的自助設備孕育創造力

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摘要

近期，高中教育中各種不同的教育課程都著重在稱作“創意教育”的課程上。在這種創意課程中，學生經歷了產品設計的活動，藉以獲得擁有創造力的態度。在這份研究當中，我們設計並鑑定一個能夠為學習看護的學生孕育創造力態度的學習環境。

我們在愛知さわみ看護短期大学執行了一個針對創意教育的實際課程。在這門課程中，學生將經歷以下兩個活動：

- (1) 設計產品的活動—在這個學習環境中，學生必須挑戰設計出一個自助設備，這個設備必須可以克服缺乏力氣、彈性、活動能力及平衡感以展示活動能力。
- (2) 對自我設計過程的省思—在認知科學這個領域，超越認知的活動像是自我反省、自我監督、以及自我規範都是相當重要的課題。在這份研究中，我們加入了自我反省的元素；反省是一個回頭檢視自我活動過程的活動，學生們將他們的設計過程大綱都記錄在圖表中。

我們分析了學生在自我監督活動中產生的變化；在這些課程當中，我們在課前及課後都提出了 Snyder 的自監控量表。成對檢定 (Paired t-tests) 在下列的描述中顯示出具重大意義的進步：“我發現要模仿他人的行為是非常困難的”、“我只能針對我已相信的論點做議論”、“在一群人當中，我鮮少是目光的焦點”、以及“在派對上，我讓其他人不斷講著笑話及故事”。這些結果顯示學生們在創造力活動的合作關係中學習到了自我監控的能力。

關鍵字：創造力, 看護教育, 教學設計, 自助設備

*由於本文作者為外國學者，逕由本辦公室特聘人員翻譯，以利中文讀者閱讀。

Fostering Creativity through The Creation of Self-help Devices in Nursing Education

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Abstract

Recently, various educational courses focusing on creativity called “creativity education” have been conducted in higher education. In such creativity education, students experience product design activities that help them acquire a creative attitude. In this study, we designed and evaluated a learning environment to foster the creative attitudes of nursing students.

We conducted an actual class in creativity education at the Aichi Kiwami College of Nursing. In the class, the students experienced the following two activities. (1) Experience of product design activities. In the learning environment, the students were challenged to design self-help devices that give the required leverage to perform certain tasks difficult due to lack of strength, flexibility, range of motion, or balance. (2) Reflection on one’s own design process. In the field of cognitive science, the importance of meta-cognitive activities such as self-reflection, self-monitoring, and self-regulation has been suggested. In this study, we incorporated this meta-cognitive activity of “self-reflection.” Reflection is the activity of looking back at one’s own activity processes. The students summarized their groups’ design processes in a chart.

We analyzed changes in students’ meta-cognitive activity of “self-monitoring.” In these classes, we presented Snyder’s self-monitoring scale before and after classes. Paired t-tests indicated significant improvements in the following statements: “I find it hard to imitate the behavior of other people”, “I can only argue for ideas which I already believe”, “In groups of people, I am rarely the center of attention”, and “At a party, I let others keep the jokes and stories going.” These results suggest that the students learned self-monitoring skills in collaborative work through these creative activities.

Keywords: creativity, nursing education, instructional design, self-help device.

高雄場

場次 E

KAOHSIUNG

SESSION E

創意教學之校園公仔設計-「尋找二中人」

尤宏章

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摘要

本研究規劃之教學模式將以跨科教學及生活化融入學習方式為主軸，運用日常生活中的觀察與體驗，讓學生了解生活中的美及美感經驗的累積，藉由校園創意公仔的設計過程，體現課程中相關科目之創意構思、批判思維、研究分析及實際參與等能力之創意教學，讓學生能夠更多元化、生活化、簡易化的學習。

本研究以高中美術課程立體造型之創作為基礎，流行文化與學校特色融入為構，運用「引導式教學」、「腦力激盪」、「心智發展圖」等創意教學方法，結合美術、國文與家政課程之統整教學，讓學生因不同的心智發展歷程而產生不一樣的創意激發。本研究以生活中常見之流行公仔風潮作為課程切入點，從公仔介紹與基本起源之了解，擴及流行文化的興起及美學經濟、角色經濟的概略性介紹，並將國文科詩詞意象與圖片聯想繪製的觀念帶入，培養學生對於抽象意念轉化為具體圖像的能力，之後導入現有便利商店及企業以公仔行銷提昇企業形象與產品識別度之案例，希望藉由主題、創意、人文、藝術與設計的多元領域整合，創造出具有代表性的主題角色，並將企業永續發展的概念導入學校發展方向；課程中並藉由學生的「腦力激盪」方式，探討與尋找學校特色及文化，再應用繪製「心智發展圖」的引導，讓學生針對學校特色及文化進行發展公仔創作與設計，整體課程研究之規劃目的，以增加學生對於學校特色參與之認同感，體現創意與生活結合之教學精神，並培養具創造力思維與能力之特質。

關鍵字：創意教學、教學模式、主題式教學

Session : E-1

尤宏章 NO PROVIDED

技術素養的調查與創意設計能力培養的思考

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摘要

本研究設計了對問卷一：技術和設計的認知（35題）、問卷二：對技術發明和技術創新的理解（25題）、問卷三：參與創造發明活動的體驗感受（18題）的78題問卷，於2007年9-10月，對瀋陽市兩所重點中學的初一（N=95）、初三（N=82）、高一（N=48）、高三學生（N=49），一所大學的文科大學生（N=92）、理工科大學生（N=100）進行了調查。根據466份有效樣本調查資料得出：問卷一，初中生對技術與設計的理解更趨於感性的方面，高中生的認識深度明顯提升，具體在技術與技能、方法的關係（ $F=8.308$ Sig.=.004）、技術與設計的關係（ $F=7.034$ ，Sig.=.008）因素上差異顯著。問卷二，高中生與初中生相比，在技術發明與技術創新的關係（ $F=17.933$ ，Sig.=.000）、技術發明對主體的要求（ $F=14.071$ ，Sig.=.000）、對技術發明的優先價值選擇（ $F=4.615$ ，Sig.=.033）、對發明專利申請（ $F=11.054$ ，Sig.=.001）差異均非常顯著，高中生得分均高於初中生。

初一學生與初三學生相比，兩問卷的各因素差異均不顯著。高一學生與高三學生相比，問卷一各因素差異不顯著；問卷二，技術發明對主體的要求（ $F=7.013$ ，Sig.=.009），技術發明的基本概念（ $F=8.029$ ，Sig.=.006）上都有顯著差異，高三學生比高一學生的認知有提升。

高中生與大學生相比，問卷一，只有技術與物的關係上，大學生有進步（ $F=14.463$ ，Sig.=.000），問卷二，大學生比高中生有更好的表現，具體為技術發明與技術創新的關係（ $F=16.875$ ，Sig.=.000），技術發明對主體的要求（ $F=5.607$ ，Sig.=.018）差異顯著。文科大學生與理工科大學生相比較，只有一項差異顯著，即技術發明的價值優先原則（ $F=21.745$ ，Sig.=.000）理工科在學生得分更高。

問卷三的統計中發現，初中生比高中生更多地參與創造發明活動（ $F=5.716$ ，Sig.=.017）。活動體驗方面，高中生與初中生差異不大。大學生與中學生相比，差異也不顯著。

以上結果說明，在技術和設計的認知方面，中學是一個發展的關鍵時期，從高中到大學，變化較小。對技術發明和技術創新的認知，從初中到大學，是一個認知變化更多的過程。但這些上述結果還需要用更科學的取樣和更大的樣本來驗證。

調查結果顯示了中學生所存在的問題：設計能力較弱；技術知識單薄。論文分析了產生問題的原因，即中學教育重科學不重技術；唯“靈感”論限制學生的創造熱情；尊重科學家甚於尊重發明家的社會文化影響，學生缺乏足夠的時間和空間參與創造發明活動。從中檢討以往的中學生創造力開發模式存在著一定缺陷，在心理機制上重視認知思維而忽略設計思維，重視創造動機而忽略動機實現的途徑——設計表達。在創意產業發展成為經濟推動的巨大力量時，一國的創意設計能力都與承擔公民基礎素質教育的中學階段有直接關聯。因此中學生創造力開發模式中應加強培養學生的技術素質，提高創意設計的能力。

The Survey on the Technical Attainment and Thinking of the Development of Creative Design Ability

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Abstract

This study was designed on Questionnaire I: technology and design awareness (35 items), on Questionnaire II: understanding of the technological invention and technological innovation (25 items), on Questionnaire III: participation in the experience feelings of innovation activities (18 items) for the 78 items . From September to October in 2007, this study conducts the survey for the famous high school of Grade One (N = 95), Grade Three (N = 82) in Junior High and Grade One (N = 48), Grade Three (N = 49) in Senior High, for the college students of one university in Art (N=92) and Science (N = 100). It is found from the survey data of the 466 valid samples that for Questionnaire I, the understanding of the technology and design in the junior high school tends to be more emotional, and the extent to the recognition is enhanced, specifically in the relations among technology, skills and methods ($F = 8.308$ Sig. = .004), between technology and design ($F = 7.034$, Sig. = .008), which should be of significantly differences in factors. For Questionnaire II, in the comparison between the senior high school and junior high school students, the differences in factors for the relations between technological innovation and technological invention($F = 8.308$ Sig. = .004), the requirement of technological invention to the subject ($F = 14.071$, Sig. = .000), the prior choice to the technological invention($F = 4.615$, Sig. = .033) , the application for the invention patent ($F = 11.054$, Sig. = .001) should be obvious. The scores for the senior high school students might be higher than the junior high school students.

In the comparison between senior high school students and college students, for Questionnaire I, the college students will have progress in the relation between technology and substance($F = 14.463$, Sig. = .000). For Questionnaire II, college students have a better performance than high school students, specifically the obvious differences for the relations between technological inventions and technological innovations ($F = 16.875$, Sig. = .000), the requirement of technological invention to the subject($F = 5.607$, Sig.=.018). In the comparison between art and science students, only one item should be obvious in differences, namely the value prior principle of technological invention($F = 21.745$, Sig. = .000), and the science students get the higher scores.

Key words: Technical Attainment 、 Development of creativity, Design Ability

以創意問題解決活動為導向探討室內設計學生設計

創造力之養成

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摘要

隨著環境變遷與國人對生活品質需求的增加，室內設計產業如已逐漸成爲一個新興市場。面對這種生活創意與環境變遷的挑戰，室內設計教育已逐漸擺脫傳統的隔間設計與裝修工程結合的概念。室內設計課程（Interior design studio）是以建築室內空間爲範圍，在不影響建築物之原有之結構系統與外在環境的條件下，充分運用自然元素與人造素材，以設計統合的手法規劃人的活動與建築空間特性，其設計過程是一種結合空間創意構思與解決環境問題的活動。美國室內設計教育研究基金會（Foundation for Interior Design Education Research, FIDER）所規範的室內設計教育，其內容包含策略性、創造性思考、全方位設計、全球性視野及文化的多樣性等項目，並了解社區或公眾服務之價值與重要性。因此，室內設計教育著重於學生設計思考與相關學門統合能力的養成，設計創造力的衍生須結合各種專業領域及個案所面對各種不同的室內環境課題。室內設計課程基本上是以學生在不同設計個案所面對的課題與因應對策，透過設計專題(或個案)所開展的學習活動(project-based learning)，藉由專業能力養成及應用設計創造力以解決個案裏的問題。本研究針對室內設計課程教學的特性，應用 Osborn 及 Parnes 等學者所提出的創意問題解決活動(Creative Problem Solving, CPS)，在教學過程中融入「目標發現」(Objective Finding)、「困惑發現」(Mess Finding)、「資料發現」(Data Finding)、「問題發現」(Problem Finding)、「構想發現」(Idea Finding)、「解決發現」(Solution Finding) 以及「接受發現」(Acceptance Finding) 等流程，從學生實際操作過程理出各個過程中因應對策，以提供室內設計課程教學之參考，讓學生循著訂定目標、收集資料、確認問題、提出解決對策及草案、評估設計方案、驗證回饋等過程激發創造力，訓練學生問題解決的技巧，在設計與解答的過程中以提升個人創造思考(Creative thinking) 的能力。

關鍵詞：創意問題、室內設計、設計創造力

Approach for Design Creativity of Interior Design Students based on CPS

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Abstract

Interior design has become an oncoming market and industry followed the environmental transition and human life quality. The education of interior design studio progressively has transformed from the traditional notion of architectural partition and treatment to concept of sustainable environment. Based on the interior space, this design activity integrating with spatial creativity and environmental solution applies the natural and artificial sources to create human activities and architectural unique. The contents of interior design including strategies, creative thinking, universal design, global view and multi-culture, and also value and importance of public community service was defined by FIDER. The students need to solve the design problems by the ways of project-based learning to promote the students individual discipline and design creativity application. Based on the characteristic of interior design studio, the studio procedure was developed a series including the steps of objective finding, fact finding, problem finding, idea finding, solution finding, acceptance finding through the application of CPS which Osborn and Parnes etc brought up the educational methodology. This approach could be a new idea for interior design studio to promote the students' capability of design creativity thinking.

Keywords: CPS, Interior design, Design creativity

非設計專業背景的學生學習創意設計問題初探一

以生活美學導向創意構思

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摘要

近年全球掀起對「創造力研究」的重視與投入，然「創造力」並非新鮮的名詞。心理學門是最早關注並主導對創造力的研究，自從美國心理學會新任理事長 Guilford 於 1950 年年會大力呼籲重視對創造力的探討後，創造力研究日漸受到心理學者的重視，經歷半世紀的努力，終能開花結果。知名學者如 Csikszentmihalyi 與 Runco 並曾獲得國內管理學術單位邀請來台講學。

本研究運用國內大學圖書館常見的資料庫—SSCI(WOS)與 ProQuest，以「creativity」與「creative」搜尋論文題目，找出 1996~2006 年間以創造力為名的期刊論文。經由反覆討論之篩選過程，將超過 10000 篇的期刊論文，逐步縮小至 1966 篇，涵蓋心理、管理、教育、經濟、社會、醫學等相關學門。其中，出自心理學門的期刊論文共有 708 篇。本研究依這些論文的發表年度、研究議題、方法、類型與研究對象五個面向，進行分類與回顧，最後並將以分析所得結果與當前國內創造力研究的思潮進行對話。

初步分析發現：(一) 雖然 1996 至 2006 年間相關學門期刊的創造力論文數大幅成長，但同時期心理學門論文數無明顯差異。(二) 研究對象以個體層次為主，且論文題目直接使用 Creativity，少用 Creative。(三) 認知心理學為創造力研究的重要理論基礎，創造性認知過程是各種形式創造力的基礎，以往它常以洞察力與概念延伸、新知識、概念連結、創造性心像成為討論議題，進行論述、比較與影響因素的探討。(四) 心理學門所進行的創造力研究，議題可大別為三部分：(1) 生物基礎、智慧、人格、情緒或動機對創造力的影響，(2) 創造力應用（如決策、問題解決、創意思考能力），以及 (3) 評量工具發展（如創造思考測驗、字義測驗）。(五) 重要的研究議題或爭論包括：智力與創造力的關係為何？創造性思考與批判性思考的關係為何？知識與經驗對創造力的影響為何？(五) 研究者認為，個體創造力會受社會環境（組織或文化因素）的影響，但這部份的研究相對較少。(六) 目前重要的研究缺口包括：孩童創造力的發展過程為何？如何鑑別動機效能的認知作用？

Session : E-1

梁俊仁 NO PROVIDED

以創新手法推動大學創意課程

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摘要

面對廿一世紀劇變的時代，經濟競爭的全球化與資訊科技迅速發展，使得台灣過去以製造業為核心的經濟發展模式受到衝擊，而必須調整因應。值此知識經濟的時代，創造力與創新能力將是未來國家與國家之間主要的競爭關鍵，知識經濟的來臨，固守「一技之長」的工作者將失去光芒，因為知識經濟的跨領域創意產業特性，也預示了新團隊力時代的來臨，以團隊為師，向團隊學習，學跨領域的知識力、學跨專業的溝通力、學跨部門的整合力、學跨意見的包容力、學跨個人的使命感。而面對全球化無聲無息的知識、創意與人才戰爭，台灣的年輕人，需要的不僅是苦讀與更多的社會關懷與公共參與，還需要更多面對挫折的信心與勇氣。

因應上述的趨勢，我們組成了一個教師團隊，從 92 學年度第二學期開始迄今四年多，在大學管理學院與通識課程開設了多門創意(業)管理相關課程，為了讓學生在學習過程中有一明確的目標予以遵循與努力，並能檢驗學子學習的效果，因此課程以「目標導向、行動學習」為核心理念，分別和非營利組織、企業(高雄捷運公司,中華電信公司,台灣中油公司)合作，或是參與政府單位(教育部、經濟部中小企業處)的提案競賽作為學期標的。課程內容設計參考 Amabile(1983)創造力成分理論 (The Componential Theory of Creativity)，其指出創造力的形成受三種核心要素所影響，分別是「領域相關技能」(Domain-relevant Skills)、「創造力相關技能」(Creativity-relevant Skills) 及「工作動機」(Task Motivation)。配合不同屬性(地方特色, 非營利組織, 科技產業等)的競賽，安排了不同的專業領域知識課程，以建立學子該領域的基本知識，俾據以發展創意。在創意技能部份教導學生創意發想技能並且透過創意個案的分享，激發學子創意，工作動機部份結合目標導向行動學習的概念，並輔以里程碑的設計，以及課程進行中教師的輔導來激發學子內在動機，引發其學習熱情。而在資訊科技(IT)時代，教師應該善用數位工具以輔助教學，因此除了以往課堂上實體之課程講授，同時運用網路大學工作平台，以「虛實並行」的模式進行課程，學生的學習不僅侷限在每週的實體課堂上，而是開始上課後的每一天，都可透過此一工作平台的應用打破時空限制、增進溝通的效率性，並可方便累積課程資訊以利日後經驗的複製以及教師、助教與學生之互動。

課程執行成果，除了參與各項提案競賽有優異的成績表現，也在網路大學平台上完整記錄學子學習歷程，以及創意學子的創意成果(創意計畫書與簡報電子檔)，同時學子從學習中增進問題解決能力與團隊合作，且培養學子創意到創新的實踐能力，並提昇學子關懷社會人文與實務能力。

本論文將以歷年創意課程個案為主軸來闡述在大學中推動創意課程的經驗:包括修課前的推廣、課程的設計、課程的進行教師(業師)與學子的互動學習、學子在歷程中遇到的挫折與成長，網路大學平台的實際運用以及學子學習的心得等，藉由對課程的回顧與檢討，期望對於創造力教培育與推動有所助益。

關鍵詞：創造力教育、創業管理教育、創業競賽

Promotion of University Creativity Curriculum

– Using Creative Measures

Abstract

In the 21st century when dramatic changes happen everywhere, the globalization of economic competition and rapid development of information technology have thrown impact on the previous economical development model that based upon manufacturing industry in Taiwan and needed to be adjusted. During an era of knowledge economy, creativity and the ability to be creative will be the major key factors for worldwide competition in the future. With knowledge economy approaches, workers who stick to “the one and the only skill” will lose their momentum since characteristics of the cross-field creativity industry predict the new arrival of team work. It is based upon a team to learn cross-field knowledge, cross-profession communication, cross-department integration, cross-opinion tolerance, and cross-individual sense of mission from the team. When facing the utterly silent global wars for knowledge, creativity and talented people, young people in Taiwan not only need to study hard and have social concerns for public participation but they also have to embrace and prepare for the confidence and courage when confronting frustrations.

While facing the above-mentioned trend, a group of team constituted by teachers has been established for more than four years beginning from the second semester in the 2003 academic year. We offer a wide variety of creative (industry) management curriculum in school of management and general knowledge department at universities for students to have a specific goal to follow and work on; then, the effectiveness of students’ learning may be examined. Based upon the core idea of “goal-oriented; active learning”, the curriculum collaborates with non-profit organization, business organizations (Kaohsiung Rapid Transit Company, Chunghwa Telecom, CPC Corporation, Taiwan), or participates in proposal competition held by government authorities (Ministry of Education; Small and Medium Enterprise Administration, Ministry of Economic Affairs) as objectives of the curriculum for the semester. Content design refers to “The Componential Theory of Creativity” proposed by Amabile (1983) indicating formation of creativity is affected by three core elements, including “Domain-relevant Skills”, “Creativity-relevant Skills”, and “Task Motivation”. To coordinate competitions with different characteristics (local features, non-profit organization, and technology industry), a variety of different professional field and knowledge curriculum are arranged to establish basic knowledge for students so that they would develop creativity. In terms of creativity skills, the objective of curriculum designed to teach students creative thinking and sharing ideas through creativity cases is to stimulate and encourage students’ creativity. In terms of task motivation, the curriculum combines with concepts of goal-oriented active learning and assisted with the design of milestone and teachers’ consultation during the program is to provide students with internal incentives for learning.

Keywords: Creativity, Innovation, Entrepreneurship Education, Competition

創意教學設計與大學生生涯決策自我效能之發展

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摘要

教育部自 2002 年發表創造力教育中程發展計畫，正式接襲我國大步朝向創意教學及創意思考的願景邁進。而教育部顧問室於 2006 年起針對大學校院推動創意學院計畫，具體展現對於高等創意教育問題的關心與回應。中正大學教育學院有鑑於高等教育創意教學、課程與制度創新的重要，提出 MIC 創意教育學院計畫，於 95 學年度起開始執行，研究者負責課程與教學創新實驗中的：魔法生涯模組之設計與執行。

本研究目的即在探討大學生接受創意教學設計課程後，自我決策生涯效能的發展情形，採用質性研究設計，採立意取樣方式，選取 96 學年度修習創造力教育學程之「創意生涯規劃」課程的四名學生為研究對象，以訪談法及觀察法針對課程中，學習的吸收及引發、影響自我決策生涯效能的因素等，進行資料的蒐集、分析與實務理論的建構。

本研究之教學設計在於，提供多元化的教學方式與課程內容，並透過教師的輔助與指導、同儕之間的合作學習以及個體經驗式的主動學習，並強調創意教學的設計，以激發學生學習動機與興趣，進而提升學習成效。

研究結果發現大學生在修習完本課程之後，自我決策生涯效能皆增強；對未來的生涯規劃亦更有把握；精進溝通、人際互動、時間管理、簡報技巧等能力；同時會嘗試運用課堂上所教授之創意技法解決問題、較能抵抗外在壓力、面對未來更有信心處理問題等。本研究亦針對創意教學課程設計提出建議。

關鍵字：創意教學設計、生涯決策自我效能

Creative Teaching Design and the development of Career Decision Efficacy

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Abstract

Since the declaration of “The White Book of Creativity Education” by the Ministry of Education in 2002, cultivating people has been the focus of national education policy and creativity education has become the key issue in national education development.

The objective of the study was to explore the development of the career decision efficacy after taking the experimental course. The study utilized a qualitative research design and used purposeful sampling to select 4 college students who took the “creative career planning course” in the fall semester, 2007. Interview and observation were the data collect methods.

Multiple teaching strategies and creative elements were incorporated into the course. The teacher served as a facilitator in the class. Cooperative learning and constructive learning were emphasized so as to enhance learning motivation and learning outcome of the students.

Preliminary results showed that the students were satisfied with the course and their career decision efficacy was enhanced. They were more confident in future career planning, good at interpersonal communication, time management, and oral presentation. Overall, the course was helpful in their daily life. The students were also able to use creative methods to solve problems, and therefore, were more tolerated to stress and more confident in future career success. Suggestions for future creative course design were generated.

Keywords: creative teaching, career decision efficacy

應用藝術創作於技專校院文化素養課程:

創造力教育實務案例

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摘要

第一作者在所服務的技專校院開設兩種文化素養課程: 其一是西洋文學和文明類的課程、其二是英詩朗誦類課程。其中除「西洋文學概論」是應用外語系專業必修課之外, 其餘課程皆為通識中心人文藝術類課程。在這些課程裏, 期末口頭報告都要求學生以小組發表的方式, 將所學習的文學作品, 以藝術創作方式呈現。學生所選取的媒材不一, 相當多元, 也常有出人意表的佳作。本研究將以文化素養作為理論背景, 陳述課程的規劃安排, 並且呈現學生的藝術作品。

關鍵字: 文化素養、技專校院、西洋文學、英詩朗誦、藝術創作、小組發表

Session : E-2

溫滢雅 NO PROVIDED

創造力問題解決之教與學的相關探討及過程分析

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摘要

本研究由探究活動中，分析大學部學生創造力問題解決能力的表現情形，以及學生表現與教師引導之間的關連。三位科學教師與 346 位學生受邀參與研究。在兩個學期、教學節數 324 節，與約 1868 份的學生評量資料分析後，發現無論是教師的創造力問題解決之教學引導或學生的能力評量方面，實驗組學生均優於控制組且達顯著差異。由統計分析顯示，教師的教學引導與學生評量表現之相關程度為 0.391，且達顯著相關 (.000)，以及教師教學可以預測學生作業表現 15.3 % 的變異量。分析實驗組學生創造力問題解決的過程，發現主動的操作與試驗、協助學生由試驗中釐清問題，以及輕鬆且專注的討論氣氛，是培養學生創造力問題解決的契機。而教師對於學生提出的複雜問題要如何協助，協助需達何種程度才有利於學生的創造力問題解決，這些問題均值得進一步探究。

關鍵字：創造力問題解決、相關分析、大學生

Creative teaching and learning, correlative analyze in inquiry approach.

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Abstract

In this study, we used teacher as researcher approach to investigate: what and how students can perform about creativity in inquiry activities, and how much the correlation between teachers' teaching and students' performance in creative problem solving. Three teachers from two colleges and 346 students from different departments were invited. Six activities include almost 324 hours teaching data and 1868 learning documents were analyzed by instruments we develop for coding creative teaching and students' creative performance. Results show that There was significant difference in both teaching and learning between experiment and control group. The correlation between teaching and learning is also significant ($r=.391$, $P=.000$). Conclusions from qualitative data suggest that strategies such as pupil interaction, scaffolding, and time for reflection can provide more opportunities for students to figure out creative solutions. This study will also discuss what and how students' creative solutions in different activities are like.

Keyword: Creative Problem Solving (CPS); Correlation analyze; College Students

培育教師終身的創造力-

以高雄市創造力教育 Focus 及 Focus& Share 計畫為例

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摘要

21 世紀是知識經濟的新紀元，知識的創新帶動了國家的進步，在現今以腦力決勝負的時代，創造力是人們適應瞬息萬變的社會之唯一方法。教學需要創意，學校的教育者就必須具備創意的思維，以多元化及多角度的觀點來培育學生問題解決及創新冒險的學習模式。高雄市創造力教育的推展融合獨特海洋主題的在地文化傳統，積極推動創造力成爲高中職、國中、國小及學前教育中重要的一環。2006 年的 FOCUS 計畫，有國民小學 26 所、國民中學 17 所與高中職校 13 所等，共計有 56 所學校參與；2007 年的 FOCUS&SHARE 計畫，有幼兒園 1 所、國民小學 30 所、國民中學 25 所與高中職校 21 所等，共計有 77 所學校參與。在國小階段的創造力教育計畫內容多著重於與學校本位課程相結合，將創造力融入各領域之教學與研發創意教材；在國中階段的創造力教育計畫內容多著重於透過學生實際參與創意活動，來刺激學生的問題解決與獨立思考力；在高中職階段的創造力教育計畫內容多著重整合校內的各科系及創意社團，並形塑學校的教學特色來與國際接軌，進而延伸跨國際的教育合作夥伴關係。

本研究以兩年的時間進行探究，旨在瞭解 2006 年及 2007 年該 133 所推動創造力教育之學校教師，經由 FOCUS 及 FOCUS&SHARE 的創造力教育計畫之推展與實施後，在自我創造力教學上所產生的影響。採問卷調查法爲研究方式，以 2006 年 56 所推動創造力教育之 205 位學校教師，及 2007 年 77 所推動創造力教育之 298 位學校教師爲研究對象，聚焦在教師本身創造力教學成長上的探討，之後進行問卷的資料蒐集、歸納統整與比較分析，最後根據研究發現提出不同年段之學前、國小、國中與高中職教師在推動創造力教育後，對自我創造力教學的影響，並比對不同教育階段的教師，在創造力教學成長上的差異情形。

關鍵字：創造力、教師、高雄市

Training of Teachers' Lifetime Creativity - Sampled "Focus and Focus & Share Program of Kaohsiung City Creativity Education"

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Abstract

It is a new era of knowledge economy in 21st Century, and new creation of knowledge brings nation's progress. Nowadays, brainpower determines a winner or loser, and therefore creativity is the only way for people to adapt to this instant and multiple changing worlds. Teaching method requires creation, and school educators must be prepared to have creative thoughts to train students resolving problems and creating new venture of learning module through multi-culture and polyangular views. The development of Kaohsiung City Creativity Education combines local traditional culture with unique ocean theme, and creativity has been aggressively animated as a major link among senior high schools, junior high schools, primary schools and pre-schools. There were 26 primary schools, 17 junior high schools and 13 senior high schools participating in "Focus Program" for year 2006, totaling 56 schools; afterwards, there were 1 kindergarten, 30 primary schools, 25 junior high schools and 21 senior high schools participating in "Focus & Share Program" for year 2007, totaling 77 schools. At the stage of primary school, creativity education program mostly contains school standard with curriculums which mixed creativity into each teaching domain and researching creative materials; at the stage of junior high school, creativity education program mainly emphasized on students' practical participation of creative activities in order to inspire students' abilities of resolving problems and independent thinking; at the stage of senior high school, creativity education program was centralized on the unification of each division and creative association within school, and form school teaching characteristic so as to connect with international track and furthermore, to extend cooperative partnership across international education.

This study has been undertaken for two years and the purpose is to understand the influence produced from self-creativity teaching for teachers of these 133 schools participating in animation and practicing of creativity education for year 2006 and 2007 under "Focus and Focus & Share Program". The researching objects are 205 teachers of 56 schools animating creativity education in Year 2006 and 298 teachers of 77 schools animating creativity education in Year 2007 to focus on the discussion of teacher himself growth of creativity teaching by researching methods of questionnaires. Afterwards, working on questionnaires collection, induction, unification and comparing analysis has been done. Finally, this study is based on different stages at pre-school, primary school, junior high school and senior high school to provide influence on self-creativity teaching after animating creativity education and compare teachers' diversity of creativity teaching growth among different education stages.

Keywords: Creativity, Teacher, Kaohsiung City

創造性問題解決教學模式對學生學習成效影響

之後設分析

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摘要

本研究透過「後設分析法」(meta-analysis)，探討創造性問題解決教學與傳統教學對學生認知、情意及創造思考能力學習成效之影響。本研究將研究變項分為文件性質、受試者性質、研究方法性質與研究案性質等四大類，各類之下又細分成十八個子變項來探討是否會造成學習成效之差異。

本研究中，認知學習共蒐集 18 篇研究案；情意學習共蒐集 20 篇研究案；創造思考能力方面，則有 36 篇研究案。各篇研究案之量化數據皆換算成效果大小值 (Effect Size)，以進行各變項之單因子變異數分析。經統計分析後，結果如下：

壹、整體成效

- 一、認知學習：創造性問題解決教學成效優於傳統教學 (ES=0.5613)。
- 二、情意學習：顯示在學習動機及態度上，使用創造性問題解決教學的方式會優於傳統教學 (ES=0.3833)。
- 三、創造思考能力學習：透過創造性問題解決教學方式的確能提升學生創造思考能力 (ES=0.6303)。

貳、各變項之分析

- 一、認知學習上「統計方式」、「研究設計形式」、「實驗組教學指導方式」、「對照組教學處理」四個變項達顯著水準。
- 二、情意學習上「教學場所」、「教學者」兩個變項達顯著水準。
- 三、創造思考能力上「出版型式」、「統計方式」、「研究設計形式」、「實驗組教學目的」、「對照組教學處理」五個變項達顯著水準。

參、學習者對創造性問題解決教學之態度

在認知學習方面，有 59% 的文獻呈現正向的學習態度；在情意學習方面，有 60% 的文獻呈現正向的學習態度；在創造思考能力方面，有 78% 的文獻亦呈現正向的學習態度。綜合言之，創造性問題解決教學確實能增進學生在學習上的效果與能力，並進而產生正向的學習態度。

關鍵字：創造性問題解決教學、學習成效、後設分析

Effects of Creative Problem Solving Model on Students' Learning Achievement: A Meta-analysis

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Abstract

A meta-analysis was performed to synthesize existing research comparing the effects of creative problem solving model on students' cognitive, affective achievement, and attitudes toward integrating information technology into instruction after experiments.

The studies were located from five sources. For cognitive outcomes, there were 38 studies collected, 20 studies on affective outcomes, and 36 studies on high level thinking ability. The quantitative data of the collected studies were transformed into Effect Size(ES). In addition, 18 studied variables were selected and each studied variable was analyzed by one-way ANOVA to relate ESs. The main findings of this study were summarized as follows:

1. The whole effects suggest that creative problem solving model is more effective than traditional instruction on both cognitive and affective learning. Their mean ES were 0.5613, respectively.

2. Four variables, statistical way, research model, experimental group teaching instruction way and comparison group teaching processing way had a statistically significant impact on the mean ES of cognitive achievement.

3. Two variables, teacher and the school location had a statistically significant impact on the mean ES of affective achievement.

4. The results of this meta-analysis show that creative problem solving model in the aspects of cognizing, affection and high level thinking ability can promote students' cognitive, affective and create thinking ability learning results. The results of the study show that students held more positive attitudes toward creative problem solving model.

Keywords: Creative problem solving 、 Learning achievement 、 Meta-analysis

高級工業職業學校學生之個人特質、學習歷程 與創新行為關係之研究

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摘要

本研究旨在探討高職學生之個人特質、學習歷程與創新行為關係之研究。母群體為國立秀水高工二、三年級學生，共 1,161 人，採分層叢集取樣的方式，針對不同科別之二、三年級學生進行抽樣，抽取十六班共 574 人實卷調查，有效問卷回收率 92%。研究統計分析方法如下，描述性統計、t 考驗、變異數分析、皮爾森積差相關、逐步迴歸等統計方法來檢定研究問題。本研究結論如下所示：

壹、根據描述性統計，高職學生在「個人特質」向度之「情緒智力」層面平均數 3.59 為最高，而在「學習歷程」向度之「評」層面之平均數 3.59 為最高。

貳、高職學生之個人特質、學習歷程與創新行為關係於不同背景變項中而有不同差異。

參、高職學生之個人特質與創新行為有顯著相關，以個人特質向度之「學習態度」相關度最高($r=.68$)。

肆、高職學生之學習歷程與創新行為有顯著相關，以學習歷程向度之「參與競賽」相關度最高($r=.41$)。

伍、個人特質對創新行為有顯著預測力。

陸、學習歷程對創新行為有顯著預測力。

關鍵字：創造力、個人特質、學習歷程、創新行為

Abstract

The purpose of this study was to investigate the relationships among students' personal attributes, process of study, and creativity of students at vocational high school. The population of the study was all the 1161 students in National Shiou Senior Industrial Vocational High School. The sample was drawn by cluster sampling, and it consisted of 574 subjects. The usable return rate was 92%. The collected data was analyzed by frequency distribution, t- test, ANOVA, Pearson correlation, and stepwise regression. The results were as follows:

1. Base on descriptive statistics, the best was emotional intelligence (M=3.59), in the factor of personal attributes, and the best was evaluation (M=3.59) in the factor of process of study.
2. The personal qualities and the study process of vocational high school students' creativity had significant differences by different background variables.
3. The personal qualities and creativity of vocational high school students was significantly correlated in several aspects. Among them the best in this study was attitude ($r=.68$).
4. The study process and creativity of vocational high school students was significantly correlated in several aspects. Among them the best was participation of contest ($r=.41$).
5. The personal attributes were potential predictors toward creative behavior.
6. The processes of study were potential predictors toward creative behavior.

Key word : Personal Attributes, Process of Study, Creativity

透過科學探索以促進孩童的創造力

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創造力是 STS 教學法 (Science/Technology/Society movement) 中五個組成元素的其中一個 (Yager & McCormack, 1989)。根據 Yager 和 Roy (1993) 的說法, STS 教學法鼓勵從幼兒到高中教育的學生 (K-12) 在他們發展科學概念時多發問以促進學生的創造力、促使他們多提出跟個人興趣相關的特殊問題、透過個人觀察探索事情的因果關係、並且產生更多與他們個人生活息息相關的高品質問題。

九零年代的美國科學教育, 重點在於兩項計畫方案的實行—美國科學全民化 (Science for all Americans, 美國科學促進協會, 1989) 以及國家科學教育準則 (National Science Education Standards (NSES), 國家研究委員會, 1996)。這兩份文獻都強調“探索”的重要性。在 NSES 中, 探索被歸類為三個主要部分—能力、理解、以及教學。然而, 今日用以探索的方法以和前幾代已大不相同 (Barrow, 2006)。國家研究委員會 (2000) 以五個特性來為學習者闡明探索的本質:

1. 致力於科學導向的問題
2. 回應問題時, 將證據排出先後順序
3. 從證據中建構出一個合理的解釋
4. 將解釋與科學知識做連結
5. 傳達並設法印證解釋

針對不同的研究, 教授科學的老師會把重點放在不同的層面上; 但是這三個探索的本質 (能力、理解、以及教學) 都將促進學生的創造力發展。

有哪些探索的策略是教導科學的教師在促進創造力上可以利用的呢? 首先, 學生必須有機會利用科學導向的調查方法去設計他們的問題。第二, 學生在設計問題的過程中必須以小組為單位一同合作。第三, 學生將會與同儕們分享他們的研究成果; 有些學生會呈現一個正式的成果發表、海報、或是科技報告。最後, “四個問題策略” (the four question strategy, Cothron et. al., 2001) 將會使自國小以至於研究所的學生建構出一個格式用以表達他們的個人問題。這四個問題包括: 1) 可用的材料為何? 2) 是否有不同形式的材料? 3) 需要修改甚麼以達到回答問題的目的? 4) 最終的結果如何測量? 這個方法提供學生一個一致的途徑以達到辨認控制變因的目的。不同組別的學生可以使用不同的創意方法來回答同樣的問題。

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Encouraging Children's Creativity with Scientific Inquiry

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Creativity is one of the five components of the science/Technology/Society (STS) movement (Yager & McCormack,1989). According to Yager and Roy (1993), STS facilitates students creativity by encouraging K-12 students to ask more questions in the their development of science concepts, encourages the development of unique questions of personal interest, investigate causes and effects of their personal observations, and generate more high quality questions associated with their personal lives.

In the the united States, the focus of science education of the 1990s was the publication of two policy documents - Science for all Americans (American association for the Advancement of science,1989) and National Science Education Standards (NSES, National Research Council, 1996). Both of these documents stressed the importance of inquiry. NSES identified three aspects of inquiry- abilities, understanding, and teaching. However, inquiry today is approached differently than from previous generations (Barrow,2006). The National Research Council (2000) clarified inquiry by identifying five attributes for learners:

- engages in scientifically oriented questions,
- gives priority to evidence in responding to questions,
- formulates explanation from evidence.
- connects explanations to scientific knowledge, and
- communicates and justifies explanations.

There would be different emphasis teachers of science would focus upon for different investigations. the use of all three aspects of inquiry will facilitate students' creativity.

What are some inquiry strategies teachers of science can utilize to facilitate creativity? first, students need to have opportunities to design scientific oriented investigations by designing their question. Second, students would work in small groups as they design their procedures to address the question. Third, students will share their findings with peers. Some students will create a formal presentation, poster, and/or technology report. Finally, the the use of the four question strategy (Cothron et. al.,2001) allows students , from elementary through graduates an approach format that can be used to address their personal question. These questions are: 1) available materials, 2) different forms of the materials, 3) what will be modified in attempting to answer the question, and 4) how will its impact be measured. This approach allows students a consistent approach for identifying and controlling variables. Different groups of students could use different creative ways to answer the same question.

擲骰子來決定學生的創造力?

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摘要

一個學生的創造力會因為接受有創意的教師孕育或是沒有創意的教師壓抑而在學校內就此被定位嗎?這份論文的目的將呈現兩層意義:如果教師沒有接受適當的創造力教育,那麼學生的創意發展將會有如抽籤一般接受機率安排;此外,創造力教育的發展也應該被視為緊急需求,立即被納入學生及教師的教育課程當中。這份論文也提出了一個建立在生態學框架上並且考量到當地文化背景的創造力教育方法 (Isaksen, Puccio & Treffinger, 1993)。

我們對於印尼一間私立大學的 128 師資培育學院大學部學生做了問卷調查。這些未來的教師認為創造力是甚麼? 這些未來的教師是否認為自己有創造力呢? 他們是否覺得學生擁有創造力是重要的? 如果是,那他們要如何教導學生使他們變得有創造力? 調查結果顯示,這些未來將成為老師的學生並未準備好要支持或發展學生的創造力,在沒有接受更進一步創意教育之前,他們的能力也還不足以執行開發創造力潛能。簡而言之,在這些未來教師的理想願望以及他們實際擁有的知識力量之間有個接合斷層("interface gap" Tan, 2004, p.278),他們還不知道如何幫助學生開發他們的個人創造力潛能。

作為緊急事故,教師培訓組織的決策者及行政人員應該立即將創造力教育納入教師及學生的課程之中。相較於將創造力潛能發展留給運氣決定,這可以說是一個比較好的選擇。

關鍵字: 創造力教育、教學創意、發展創造力的阻礙、生態學

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Playing Dice With Students' Creativity?

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Abstract

Should students' creativity be nurtured or squashed on account of a creative or uncreative teacher one gets allocated in school? The purposes of this paper are two-folds: it presents how the development of students' creativity can be left to the luck of the draw if action is not taken about teachers' creativity education and proposes creativity education to be a compulsory strand in student teachers' education as a matter of urgency. This paper also suggests an approach to creativity education based on an ecological framework of creativity (Isaksen, Puccio & Treffinger, 1993) which should take into account of the local culture or context.

A survey was conducted with 128 undergraduate students from a teachers training college of a large private university in Indonesia. What do these future teachers think creativity is? Do these future teachers believe they are creative? Do they think it's important for their students to be creative? If so, how would they teach their students to be creative? Results indicate that these teachers-to-be will not be ready to support or develop students' creativity and insufficiently equipped to implement their ideas of developing creative potential without further creativity education. In short, there is an 'interface gap' (Tan, 2004, p.278) between what is desired or deemed important by the teachers-in-training and their knowledge and know-how in helping future students tap into their individual creative potential.

As a matter of urgency, policy makers and administrators of teacher training organizations should consider creativity education to be made compulsory for student teachers. Arguably, this is a better option than leaving the development of creative potential to chance.

Keywords: creativity education, teaching creativity, blocks to creativity, ecology.

未來教育家及音樂家的知覺探索與創造力

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摘要

研究顯示，創造力與知覺探索是緊密相關的兩個變因。根據這份報告，表演藝術工作者像是音樂家在與其他擁有創造力的團體競爭比較時確會展現出較高的表演水準。這份研究根據對 127 名土耳其大學音樂及教育學系的學生所做的調查，探討知覺探索對於創造力的影響。ZKPQ 量表(Zuckerman-Kuhlman Personality Questionnaire)中 KTCPI 量表(Kathena-Torrance Creative Perception Inventory)以及知覺探索量表(Sensation Seeking Scale)的 SAM 結果同時被應用在這個主題上。

結果顯示，知覺探索並不因為學院型態不同而有所改變；我們從 SAM ($F= 20.73$, $p<.01$)上得知了知覺探索的重大影響力。音樂系的學生在藝術性這個項目上獲得較高的分數($F= 27.92$, $p<.000$)，然而小學教育系的學生則是在環境知覺這個項目獲得較高的分數 ($F= 4.05$; $p<.05$)。正如文獻探討所示，知覺探索決定了創造力的表現。然而，並沒有任何結果可以歸納出音樂家在知覺探索方面會比教師表現出較高的水準。我們只能將這個結果的解釋以及建議提供給土耳其未來的教師，讓他們能夠有能力解決存在於知覺探索、創造力、以及教師身分認同之間的衝突。

*由於本文作者為外國學者，逕由本辦公室特聘人員翻譯，以利中文讀者閱讀。

SENSATION SEEKING AND CREATIVITY IN PROSPECTIVE EDUCATORS AND MUSICIANS

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Research demonstrated that creativity and sensation seeking are closely connected variables. According to the literature, performing artists such as musicians do exhibit higher levels of sensation seeking when compared to other creative groups. The present study investigated the effect of sensation seeking on creativity in 127 Turkish university students in the departments of music and education. SAM in Kathena-Torrance Creative Perception Inventory and Sensation Seeking Scale from the Zuckerman-Kuhlman Personality Questionnaire were administered to the subjects simultaneously. Results demonstrated that sensation seeking did not differ according to the type of school. A significant influence of sensation seeking on SAM ($F= 20.73$, $p<.01$) was obtained. Students in the music department had higher scores on artistry ($F= 27.92$, $p<.000$), whereas students in the department of elementary school education had higher scores on environmental sensitivity ($F= 4.05$; $p<.05$). Similar to literature findings, sensation seeking predicted for creativity in this study. However, no generalization could be made that musicians have higher levels of sensation seeking than teachers. Explanations for this situation are made and suggestions are given for prospective Turkish teachers to solve the conflict between sensation seeking, creativity and conventional teacher identity.

高雄場

場次 F

KAOHSIUNG

SESSION F

高中國文文言文創新思維教學研究

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摘要

目前進入高中就讀之學生，由於在國民中學時期，本國語文教學方面，文言文選文篇數逐年減少，難度逐年降低，在加上國民中學在社會學科領域裡，對於中國古代的歷史部分，內容大幅刪減，影響所及即是高中國文教學，尤其是文言文這個部分，除閱讀能力的降低以外，對文章的寫作背景、作者的生平事蹟、歷史事件的前後因果，似乎已經脫節，致使文義無法做有效的掌握，再加上 95 暫綱推動後，國文科時數再次被壓縮，造成教與學雙方面的困擾，因此如何掌握有限的授課時數，導引高中學生進行創新思維的教學活動設計，藉此提升學生的學習興趣，由被動之接受為主動之學習，同時在教學法上取得事半功倍的效果，已成為教改後，必須著手研究之新趨勢。

筆者過去曾於高中任教，現並於彰化師大講授教材教法、教學原理、教學設計已近 20 年，對於提升高中生文言文之學習興趣，主張問題之發生不在於是否運用講授教學法，而在於教學法有無創意，教學內容是否創新。因此教學活動在策略上能否運用創思，導引學生的聯想力、創造力，才是提升教學成果的途徑。

一般而言高中教師受制於大學學測、指考的影響，過度依賴教師手冊、參考用書，導致教學內容完全依循順向思維、陳年舊說，對課本範文進行講解。於是即使百位、千位之國文教師，其詮釋語義、解讀文句的內容幾乎一致。這種教學形式當然不能引起學生的學習興趣，致使文言文教學除了背誦課文、死記國學常識以外，對於文言文教學毫無新鮮感可言，是以筆者希望透過創新思維，從問題設計引導學生發揮創意，從多元的角度作思考，對文意進行深度的討論與理解，甚至利用媒體、活動設計營造情境，使學生從寬廣的層面深究及鑑賞文言文作品。

例如：陶淵明〈桃花源記〉，可以提出「桃」是否可否諧音為「逃」，教師可於兩個途徑進行創思導引：1.「桃」在中國文學作品裡隱含的意義，「桃」在文學作品裡「象徵」手法的運用，君子與「桃」的關係。2.陶淵明為何而「逃」避(隱居市郊)?是個性是然?是大環境的混亂(政局)?是兒子的愚不受教?是追求創作的環境，以成就「立言」?

又如「漁人緣溪行」文中為甚麼是「漁人」?「漁人」是否為「愚人」的諧音?如果用「愚」來做研究文意的線索，是否有不同的發現?

本論文即係以「創意」設計問題，從事創新思維教學之實驗，並透過筆者於台中縣、市及彰化縣任教之教碩班研究生進行行動研究，期望將這項教學設計及行動研究之成果，藉本次論文發表將心得與同好分享，並期盼獲得指正，作為本論文繼續研究之參考。

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鄧家茜等 只有英摘

A Content Analysis of Technological Creativity

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張惠如 Hui-Ju Chang⁴

Abstract

Taiwan was implemented 'Grade 1-9 Curriculum' reform since 2001. Among the ten Competence Indicators, 'Appreciation, display and innovation' and 'independent thinking and problem solving', both emphasize that educate students to be 'thinking, innovative' nationals are the important educational goals at present. (Cheng, 2002). The relation between technology and creativity is close, and it can't be ignored that the cultivation of technological creativity. For the reason, there is a need to collect and analyse documents and then distinguish the concept and definition of technological creativity.

This study distinguished the similarities and differences of technological creativity and scientific creativity at first, and then the research group adopted content analysis of publication in selected databases from 1985 to 2006. The databases are as follow: databases of National Central Library, Electronic Theses and Dissertations System, ERIC-EBSCOhost (ERIC), Social Sciences Citation Index (SSCI). Certainly, there are a lot of databases that are worth exploring besides these four databases. This study only one beginning, it hopes to arouse technology education researcher to understand and value technological creativity deeply.

The researcher sorted out all published articles as nine categories according to the analysis of documents. The results revealed that the attention of technological creativity has trend to increase in education recently years. Moreover, the published articles belongs to the categories of 'teaching' are in the majority and most of them discussed about the teaching methods, development inventories, and course, etc...

Furthermore, this research probed into the intension of technological creativity further and generalized the definition. Technological creativity is a course of producing the original products and it pays attention to the output of the concrete achievement more than general creativity. Thus, technological creativity can not be only by imagining or only stopping in the original idea, but should implement, create actually, and appraise results.

Key words: Technological creativity, Content analysis, Scientific creativity

Session : F

蘇雅慧

只有英摘

What Kind of Creativity Do We Need in Lifelong Learning Practices? From the focus of changing things to the focus of creating ideas

Abstract

This paper considers what the idea of creativity can mean, and how it can contribute, when creativity becomes a key to the development of lifelong learning practices. While the classical concern for developing creativity mainly derives from humans' interest in the possibility of designing, producing or inventing things to change human life, the idea of creativity in relation to the development of lifelong learning practices tends more towards the emphasis on producing ideas in dealing with unpredictability and contestability in the knowledge-based society. The latter is a broader notion of creativity, as it is not regarded as simply an intellectual talent for a few who intend to leading to the change of things, but rather as a general habit of mind, a way of being, required for all as lifelong learners, who need to creatively propose new and flexible solutions to the changing situations they encounter. To this end, 'learning to think' in creative ways to meet challenges is the key to the development of effective lifelong learning practices. Analytic thinking, synthetic thinking, and practical thinking, proposed by Sternberg who use them to facilitate the development of creativity is helpful in pointing out the direction of how one 'learns to think' in being a lifelong learner. This implies that the development of creativity in lifelong learning practices is characterized as the inner self-development of learners themselves in terms of their thoughts, rather than the focus on the external and extended creation of things produced by, yet eventually separate and independent of, the creator. The focus of developing creativity in this sense is shifted from being a specific ability with a link to certain disciplines towards being the general character for lifelong learners, from the production of things towards the production of ideas and action, from the person as the author of something towards the person as the author of oneself without necessarily resorting to the external production.

The main body of the paper is more theoretical in its orientation. It seeks to adapt or extend our understanding of creativity in attempting to facilitate the development of lifelong learning. The structure of this paper is as follows. Firstly, the essential characteristics of creativity are explored, as the basis of understanding what meanings it may offer to the development of lifelong learning practices. Then, why creativity is required and how it may be seen differently in lifelong learning practices are then to be discussed. The discussion centers upon the significance of creativity, and what features it is characterized to have, when embedded in lifelong learning practices. Finally, implications for pedagogical practices to reach creativity that in turn could help the effective development of lifelong learning practices are outlined.

中學生創造力開發課程模式研究

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摘要

本研究以東北育才外國語學校開設的“中國學生創造力開發”課程的模式為研究物件，通過實踐進行調整。課題組首先於 2005 年 11 月進行了“創造力開發課教學內容和教學效果調查”，在所列 26 項教學內容和方法中，初中三個年級的 145 名被調查者最感興趣的教學內容為：動手製作課、室外觀察活動、頭腦奧林匹克比賽、圖書館實地考察、想像能力訓練、模型製作方法等；最感受興趣的教學方法是遊戲教學法、體驗教學法等。相對不太感興趣的教學內容，依次排列：觀察報告、小發明作業及指導、研究性學習如何選題、研究性學習論文撰寫、想像作文比賽。對教學效果的調查中，被調查者對這門課的喜歡程度得分最高，接近滿分 3（ $M=2.4897$ ， $SD=.67820$ ）但對是否增強動手能力的的評價較低（ $M=1.8966$ ， $SD=.96267$ ）。論文分析了學生的評價結果，(1)學生對於的動手製作和設計這種參與性學習內容更感興趣；(2)年齡對教學內容的喜好有一定影響，低年級學生對於走出課堂深入生活的教學內容普遍接受；(3)對某些教學內容，如對小發明指導和研究性學習等，個體差異比較明顯（標準差 SD 均在.80 以上），說明有些學生沒有興趣，今後課堂活動設計應當內容多樣化，既要有科技類的活動，還要有藝術類的活動；(4)學生研究性學習的教學內容評價不高，主要是方式陳舊，應改為初中生更能接受的、生動的教學方式；(5)學生對佔有一定時間、且帶有評價性的活動不感興趣，一方面說明創造力開發課的體驗性有別於以學習知識為主的課程，評價也對創造有一定副作用，另一方面也說明，由於課業較緊，學生對需要付出一定時間和努力的作業產生矛盾心理。

2006 年 9 月新的課程模式增加了創意設計部分。在教學方法上更重視動手和體驗。具體為第一部分:創造性思維訓練從創造的心理方法出發，重點進行突破限制，挑戰定勢、發散思維和逆向思考練習，以克服情感、動機和思維障礙。第二部分:創造技巧和方法的學習。只選擇了中學生能夠接受的三類創造技法：發散和收斂類方法、借鑒變異類、系統轉化類方法。第三部分:創意設計和實踐主要培養學生形成初步的技術設計思路和技術設計能力，即觀察能力，想像構思能力、並能夠運用圖和模型來表達設計。第四部分:研究性學習主要讓學生掌握觀察、實驗和調查等研究性學習的方法，體驗科學研究的過程，並將研究性學習安排在三年級。

關鍵字：中學生；創造力開發；課程模式

The Research on the Curriculum Model of the Creativity Development of Secondary School Students

**Yu Miao , Luo Lingling , Zhou Chunfang
Abstract**

This study takes the curriculum model of the creativity development of Chinese students in the Dong Bei Yu Cai Foreign Language School as the research target, through the practices for the adjustment. This research team firstly conducts the survey on the teaching content and effectiveness for the course of the creativity development in November, 2005. In the listed 26 teaching contents and methodology, the 145 respondents in Grade 3 of Junior High School are most interested in the content of teaching, such as hands-making classes, outdoor observation activities, intellectual Olympic Games, the library site visits, imagination training, model making, and so on; they are most interested in the methodology, such as games teaching methods, teaching experience, and so on. They are relatively less interested in the content of teaching, ranking them in order: observation report, the homework for invention and guidance, the ways for the theme selection of research studies, the paper writing for the research studies, the competition for the imaginative writing. In the survey of the teaching effectiveness, the respondents like this course most with the highest score, nearly approaching 3 score($M=2.4897$, $SD=.67820$). However, their assessment on whether their hand-making capacity is enhanced is the lower ($M=1.8966$, $SD=.96267$).

This paper analyzes the evaluation results of students. (1) The students are more interested in the participatory learning content in the hand-making and design. (2) The age will have a certain impact on the preferences of the teaching content. The low-grade student can generally accept the teaching content for going out of classes for the outside world. (3) In terms of a certain teaching content, the individual differences are quite obvious (SD standard deviation are more than .80), such as the little invention guidance and research studies, indicating that some students have no interest that needs the activities design in class to be diversified in the content with both the activities of science and technology, and arts. (4) The assessment of teaching content in the students' research study is not high, mainly using the old way that is supposed to be replaced by the acceptable and vivid teaching method for the junior high school.(5) The students are not interested in the activities that might occupy a certain period of time and be of the evaluation. On the one hand, it indicates that the experience of the creativity development courses will be different from the courses that are based on the knowledge. On the other hand, it also shows that owing to the tight time for school, the students will need to pay a certain period of time and effort, which will lead to the psychological contradictions.

Keywords: secondary school students; the creativity development; curriculum model

高雄場

海報

KAOHSIUNG

POSTER

國中教師人口變項、玩興特質與創意教學行為之相關

研究一以學校組織創新氛圍為調節變項

莊皓皖

屏東縣中正國中

摘要

在目前知識經濟的時代裏，提昇國民的創造力就能夠增進國家的競爭力。過去的研究中發現玩興會提高個體的內在動機，並激發其創造力的表現。擁有玩興特質的人較能接受新的觀念，因而提昇其擴散性思考的能力及創造性問題解決力。黃惠君(2005)以高雄市公立國中教師 320 人為研究對象，發現玩興對於國中教師的創意教學表現有正向效果。Aguilar(1985)以社會情境的觀點闡釋玩興，指出玩興是天生的性格傾向，而社會環境能激發玩興之崛起與展現。他認為在社會環境中，個人玩興會受到社會性元素(重要他人、社區與組織、發明與創新)的影響，因此個人玩興的表現是個人特質與外在環境因素交互作用的結果。

Csikszentmihalyi(1996)也提出創造力的三指標系統模式，此三指標分別為：個人、領域與學門。他認為創造力是由個人、產品與環境互動的結果，環境會影響個體的創造力表現。蔡宜貞(2005)以 500 位國小教師為研究對象，結果發現組織創新氛圍確實會對教師的創意教學外在動機造成影響。綜上所述，再加上國內目前對於創意教學的研究當中，較少以玩興特質為自變項、學校組織創新氛圍為調節變項之研究，也引起研究者對此議題之興趣。因此，本研究將在控制人口變項(性別、婚姻、年齡、年資、教育程度、職位)的情況下，探討國中教師的玩興特質對於創意教學行為之關係，以及教師玩興特質與學校組織創新氛圍對於創意教學行為之聯合預測力，最後檢驗學校組織創新氛圍對於兩者的調節作用。

貳、研究工具 本研究使用之工具包括了「教師玩興量表」、「學校組織創新氛圍量表」與「創意教學行為量表」。「教師玩興量表」係引用黃惠君(2006)與指導教授根據國內外學者對成人玩興的定義與特質 (Glynn & Webster, 1992,1993; Guitard et al., 2005) 及余嬪等人 (2003)、曾敬梅 (2002) 所編製之成人玩興量表，在題項描述上融合教學工作特性修訂編製而成的「教師玩興量表」，主要目的在於測量國中教師在教學上的玩興表現；「學校組織創新氣氛量表」則是引用蔡宜貞(2005)與指導教授根據邱皓政(2002)「學校組織創新氣氛量表」修訂編製而成的；「創意教學行為量表」則是引用黃惠君(2006)與指導教授所編製的「創意教學行為量表」來進行研究。本研究以屏東地區的國民中學教師為研究對象，依分層隨機抽樣的方式來進行問卷調查。資料分析採描述性統計、項目分析、信度分析、因素分析、單因子多變量變異數分析、階層迴歸分析。

參、研究結果 經過統計分析後，本研究得到下列四點結論： 1. 教師玩興特質對於創意教學行為具有顯著正向影響。 2. 學校組織創新氛圍對於創意教學行為具有顯著正向影響。 3. 教師玩興特質與學校組織創新氛圍能夠聯合預測教師創意教學行為。 4. 學校組織創新氛圍對於教師玩興特質與創意教學行為有調節效果。

關鍵詞：玩興特質、組織創新氛圍、創意教學行為、調節變項

Poster-KS

莊皓皖 **No Provided**

中等以下學校校長創造性領導、學校創造性組織氣氛與教師創意教學關係之研究

江明曄

國立台中女中教師

摘要

本研究主要目的在探討中等以下學校校長創造性領導、學校創造性組織氣氛、教師創意教學之關係，以作為教育行政領導及教學實務之參考。為達上述目的，研究者透過文獻探討，建構各概念的意義及初步內涵，其後實施德懷術調查，凝聚專家學者、中小學學校校長及創意教師等專家之意見，確立校長創造性領導、學校創造性組織氣氛、教師創意教學之內涵後，編製問卷調查工具。研究母群為臺灣本島地區國立(直轄市立)高級中學及國民中小學正式教師，調查樣本之選取係依據教育部統計處(2006)「九十四學年度縣市別中小學教師統計」，按各教育階段與縣市之公立學校教師總人數比例，以分層隨機抽樣的方式，選取調查樣本，進行正式問卷施測。本研究共抽樣 87 所學校，816 位教師。研究工具為自編之「中等以下學校校長創造性領導、學校創造性組織氣氛與教師創意教學相關議題調查問卷」，其內包括「校長創造性領導」、「學校創造性組織氣氛」、「教師創意教學」三個分量表。調查施測結果共回收 727 份問卷，回收率為 89.09%，剔除無效問卷後，獲得 713 份有效問卷，有效回收率 87.38%。所得量化資料經以描述性統計、多變量變異數分析、相關分析、迴歸分析及典型相關分析等統計法進行分析。

依據文獻探討及實證研究結果，獲致幾項重要結論，並依據研究結論提出建議，以供實務工作及未來研究之參考。

關鍵字：校長創造性領導、學校創造性組織氣氛、教師創意教學

The Relationship Between Creative Leadership of the Principals, Creative Climate of the Schools, and Creative Teaching of the Teachers of Intermediate Schools

Chiang Ming Yeh

National Taichung Girl's Senior High School

Abstract

The main purpose of this study is to discuss the relationship between creative leadership of the principals, creative climate of the schools, and creative teaching of the teachers of intermediate schools, including high, junior high and elementary schools, as further reference for leadership in educational institutions and practical applications. To achieve the goals described above, the researcher, after analyzing archival files, conducting Delphi Technique, and gathering opinions from experts, elementary and junior high school principals, and teachers, proceeded to create a survey.

The object of this research is the teachers of main island of Taiwan's public high, junior high and elementary schools. The samples are taken according to the statistical data of the Ministry of Education's Survey Department (2006), and also randomly in sections, with the number of teachers taken in to account. Totally 87 schools and 816 teachers are surveyed. The study tool is the "Creative Leadership of the Principals, Creative Climate of the Schools, and Creative Teaching of the Teachers of Intermediate Schools, Including High, Junior High and Elementary Schools and Related Discussions Survey". Out of the questionnaires sent, 727 surveys were replied, with a reply rate of 89.09%. After deleting insufficient surveys, 713 satisfactory surveys were attained, reaching the effective response rate of 87.38%.

After evaluating the data with descriptive statistics, multivariate analysis of variance (MANOVA), correlation, regression, canonical correlation analysis, the conclusions were reached. Suggestions will be made according to the research results in mind, to serve as reference for practical applications and future studies.

Keywords : creative leadership, creative climate, creative teaching

成人教育工作者方案規劃能力訓練課程之 規劃與實踐：創造力培育的成效評估

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摘要

本研究主要是評估成人教育工作者創意訓練方案執行的成效，以 Kirkpatrick 的四層次評估模式為基礎，自編問卷來評鑑其成效。本研究運用單組前測後測設計，進行資料蒐集與統計分析。研究結果顯示該訓練方案有顯著的成效，在反應層次中，成人教育工作者對於該訓練方案中的各層面感到滿意，尤以師資為首；在學習層次中，成人教育工作者在前測後測有顯著的成長，並以高齡學習多元模式為首。

經由開放性問題分析結果顯示，成人教育工作者喜歡師資的教學方式、氣氛與專業。以及對於循序漸進的安排順序與步調感到滿意，偏愛實作、案例分享、於實務結合的學習方式，也認為此次培訓方案為創新且具有系統化設計的。

該培訓方案，主要是希望透過創造力激盪策略的教學，使成人教育工作者能夠規劃出不同於以往的高齡學習方案。在量化問卷與質性資料兩者驗證下，發現學員學會了系統的方案設計、企劃書的撰寫與執行，並且能夠運用不同的高齡學習模式在其所設計的方案中，並且也認為自己的創意變多了、創意被激發了，也會運用創意點子激盪策略在規劃高齡學習方案中，這樣的結果顯示出，除了在創意激盪策略上的認知有所成效，在實際操作面上學員也真的會運用激盪策略於其中。

關鍵字：成人教育工作者、Kirkpatrick 四層次評估模式、方案規劃能力

Poster-KS

魏惠娟 等 No Provided

數位媒體與科技融入藝術創意與創作教學之探究

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摘要

在台灣的通識教育本持著以培養大學生成為博雅的知识份子與文化人為目標，期使各學科領域學生藉由通識教育認識人類精神文明與重要議題。如何在有限的人力資源下，使教師藉由落實人文精神在藝術領域的專業教學與活動方案設計、多元教學環境的設施開發，以科技為輔進而增進藝術生活的空間與風格的質與量，並以人文來提昇生活的內涵與品質，期許落實基礎多元藝術的網路教學策略與計畫來服務學生，進而提昇教師的教學品質，是研究之動機。本研究乃是以大學通識課程中之「人文藝術」為主軸，進行學科協同教學之整合暨課程之研發，並以既有學門為基礎，進行科技化的教學目標，藉由多元化、科技化的教材設計及課程整合，並利用教室情境化之建置，使人文教育與媒體科技作一全方位之整合，以營造出多元功能的藝術開放學習空間及網路化的學習情境。

本研究的目標著重於探索多元藝術與科技學習及教學科技的相關性。研究從多元藝術創造的探討觀點出發，試尋求東西方文化中在不同族群、語言、歷史經驗中，媒體、科技與藝術在形式差異下如何創造整合融入彼此，進而衍生新創意及新藝術的產生。本課程研究的設計將從視覺、聽覺、表演藝術等面向來推展多元藝術媒體教學活動為出發點，深入淺出地探討在科技藝術、音樂藝術、造形藝術之間的相互關係。藉由研究課程主題整合教學經驗之初探，創新學生學習歷程檔案之建構，更期盼藉由網路化之建置，將學生於課程中創作與學習之歷程如個人創作、個人發表、小組討論、小組合作演練成果完整紀錄於電子學習歷程檔案中，對同儕間能達互相學習觀摩之成效，對老師教學改進上，更能從學生學習歷程檔之成果客觀評量與思考改進教學之修正並涵養其對新藝術媒體的創造。

關鍵詞：通識教育、人文藝術、藝術統整、電子學習歷程檔案

Digital Media And Technology Into The Artistic Creativity And Creative Teaching Inquiry

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Abstract

In Taiwan, the goal of general education with is training the university student to become the learned knowledge individual cultural cultivation. How to strengthen the spirit of liberal art in teaching methods, activities, and environment in conjunction with technology is the motivation of this research project. This research project trends to offer a mechanism of internet teaching in liberal arts and a channel to provide more space and different styles to the life of arts in pursuit of a better teaching quality.

The purpose of this study is exploring the planning principles and related issues of varied arts in the development of technological learning and instructional technology. From the artistic creation of multiple point of view, it tries to seek in the East and West culture in the different tribal grouping tribal group, the language, the historical experience, the media, how the science and technology and do art create the conformity under the form difference to integrate each other, then grows the new creativity and the new artistic production.

This curriculum studies the design from the vision, the sense of hearing, the performing arts and will face promotes the multi-dimensional artistic media teaching activity will be a starting point, will discuss with profundity and an easy-to-understand approach between the technical art, musical art, the visual art reciprocity.

Searches because of the research curriculum subject conformity teaching experience at the beginning of, the innovation student studies construction the course file, hoped for the network establishing of because of, the student in the curriculum the creation and the study course of like individual initiative, individual publication, the group discussion, the group cooperation trains the achievement integrity record in the e-portfolio, can reach to the associates between studies mutually observes and emulates the result, to teacher in the teaching improvement, can study achievement of the course files from the student. to comment objectively the quantity and revision of and self-control it the ponder improvement teaching to the new artistic media creation.

Keywords: general education, arts integration, e-portfolio

漢文化的「馬」造形在視覺圖像創造力表現之研究

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摘要

圖像的應用隨著需求與媒體而變化，但以圖像來替代文字來傳達的精神仍不變，圖像為現代人重要的傳達方式，圖像較文字線性的傳達具良好的傳達效率，人類自古以來便知道使用圖像來傳達周遭事物等訊息，創意圖像更是近年視覺傳達設計及創意圖像教學的主流。本研究主要以質性研究方法為主，量化研究為輔，針對漢文化中 之「馬」造形之在視覺圖像創造力表現上進行分析探討。在質性研究方面是以「圖像社會學」(Sociology of Icons) 角度，從平面設計作品形成之背景資料中，進行有關「馬」造形之創意圖像表現之分析、描述與詮釋，運用質性研究中的「紮根理論」(Grounded theory) 歸納方式，對田野調查所得之各項創意圖像及資料進行分析、歸類與描述，並進而詮釋各「馬」造形之創意圖像在平面設計圖像中所呈現出的現象與 意義；在量化研究方面是以半結構性的問卷型式進行各年齡層之訪談，並以「論述分析」(protocol analysis)進行歸納整理訪談內容以作為研究依據，研究樣本以之漢文化中的馬造形資料為主，從創意圖像意涵分析文化趨勢之關係性，並探討馬造形風格 群相之形成樣貌，及探討探討馬造形，希望藉由本研究提供創意圖像設計之相關基礎研究、視覺圖像創造力表現與創意設計教學融合之參考。

Poster-KS

王藍亭 No Provided

公共圖像符號在創意教學中的視覺設計研究

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摘要

公共圖像符號為「面性」的傳達方式，而文字為「線性」的傳達，人類自古便懂得使用公共圖像符號來傳達訊息。本研究將從公共圖像符號的角度，探討公共圖像符號的起源、演進、發展及相關之圖像符號基礎理論，與創意教學中的公共圖像符號之視覺設計進行綜合探索分析。公共圖像符號設計有兩大應用層面：一為應用公共環境之圖像符號設計；二為應用介面之圖像符號設計，本研究之範圍界定在應用公共環境之圖像符號設計上，進行公共圖像符號之視覺認知及視認評估調查分析。此外 本研究更在創意教學的課堂中，實際進行公共圖像符號的實用性設計，以應用媒體改變與時代公眾需求的快速變化，希望能延續以圖像替代文字傳達的傳統精神，並從創意教學的學習過程中，設計出兼具辨識性、簡潔性、理解性、美感性等的公共圖像符號，且能將此標準設計形式，往多元文化與無國界的表現形式發展。

Poster-KS

王藍亭 劉麗真 **No Provided**

國小高年級學童創意態度量表編製之研究

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摘要

創意不只是個口號，亦是種心態。以教育的觀點來看，態度的養成在兒童期是最容易改變塑造的，若能夠及時發揮教育的功能，瞭解國小學童創意態度傾向，對於創造力的發揮應有事半功倍之效。本研究目的旨在發展一份具有信、效度且適合國小高年級學童之創意態度量表，藉以得知高年級學童創意態度之傾向，作為評估高年級學童創造力之參考。

本研究以自編之「創意態度量表」做為研究工具，首先透過文獻探討，探究創意態度的意義及所包含之內涵，再發展試題。研究樣本為 246 人。所得資料經統計分析，結果如下。

一、創意態度量表內容：最後完成之創意態度量表計 52 題，分為「發現問題」、「產生點子」、「實行點子」三個分量表。

二、信度分析：本量表三個分量表內部一致性 α 係數分別為 .865、.894、.902，總量表內部一致性 α 係數為 .954，具有十分良好的穩定性和一致性。

三、效度分析：經由驗證性因素分析的配適度檢定，顯示本研究整體理論模式配適符合可接受的適合度檢定水準。

最後根據研究結果提出建議，以供教育單位、教師及後續的研究者參考。

關鍵字：創造力、創意態度、歷程、人格特質

The Study of Development of Creative Attitude Scale for Students of the Fifth and Sixth Grade in Elementary

School

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Abstract

The purposes of this study were to develop a creative attitude scale for students of the fifth and sixth grade in elementary school and to establish the norm of scale. The first step of this study was identify the meaning and items of creativity attitude, then develop the scale. There were 246 samples for test. The results of the data analysis were as follows:

1. Contents of the scale: The finished creative attitude scale are 52 items which were divided into three subscales-"finding problems", "generating ideas" and "fulfilling ideas".
2. Reliability analysis : According to Cronbach's alpha analysis. It reveals that there was a good stability and conformity among the items.
3. Validity analysis : According to the fit test of the confirmatory factor analysis (CFA), it is pointed that the whole theory model of this study reaches the standard of the fit test.

According to above conclusions, suggestions is offered for education authorities, teachers and advanced researchers.

Key words : creativity, attitude scale, process, personal characteristics

Poster-KS

李曉美 未提供

The Value of Thinking Skills and Creativity in Drama Teaching

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Abstract

The purpose of this research is to reveal and analyze the role of drama teachers and look at the value of creativity and thinking skills in the drama classroom. Then to discuss the relationship between drama teaching, thinking skills and creativity in education. The key points of this research will relate to Drama Education, Teacher in Role, Creative and Critical Thinking, Problem Solving and Creativity. This study is based on research that took place in the drama classrooms of two teachers in a secondary school during one week of the summer term. The main methods used for the data gathering were observations of classroom work and individual interviews with the teachers.

This paper is divided into two parts. Firstly the concepts of drama education and Teacher in Role are presented as a literature review. The value of creative and critical thinking in education is established, as well as problem-solving skills and creativity in relation to the potential of the creative process in drama work. The methodology used is then explained and the research questions and hypotheses discussed. The second part of this paper presents the data, the results and the interpretation of the research with reference to the literature.

The results of the research present aspects of drama teaching in schools as complex but creative. The main findings of this research confirm the multiplicity of roles of drama teachers in education, and that creativity and thinking skills are developed through the creative process of drama teaching.

走過創意、轉化創意、傳遞創造力的元素

~ 一位創意學子幼教任教的行動與省思

歐庭君

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摘要

作者曾是創意學子計畫「遠嫁他鄉，也是家鄉」的團隊成員，本論文是作者帶著創意學子計畫的學習經驗，在幼教任教過程中對於「創造力」議題的行動與省思。本論文以行動研究的方式呈現教學現場中實際的教學事件與教學省思。

本論文主要分為三部分，第一部分為幼兒創造力的觀察，針對班上幼兒的創意展現以及不同類型創意展現過程(建構式的創意、合作式的創意、有創意沒技巧、有技巧沒創意、有創意沒耐性等類型)中教師角色的挑戰與思考進行省思與分析；第二部分為創意教學的設計與展現，以主題展為架構，透過課程設計與主題展呈現，思考創意的延伸活動；第三部分為創意元素的傳遞，作者由「遠嫁他鄉，也是家鄉」學習經驗出發，提出創造力展現要素以及教學現場中教師可以傳遞給幼兒的創意元素，例如：陪孩子作夢，跳脫框架的示範，感受力的引導等。

Poster-KS

歐庭君 No Provided

中小企業組織創新與創業精神之研究

—以國家磐石獎得獎廠商為例

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摘要

台灣的中小企業具有強烈創業精神，靈活的經營彈性、綿密的產業網絡以及高度的學習熱忱等特質，即使身處新臺幣升值、工資、土地成本上漲、金融風暴等困境中，仍能以強勁的韌性與活力不斷成長，已成為臺灣經濟發展的穩定力量與成長動力，亦是許多發展中國家的典範。

但是另一方面，中小企業近幾年在發展上也面臨許多挑戰與瓶頸，過去賴以為生的競爭優勢已漸漸消逝，為了突破困局，開創新的天地，中小企業除了創業精神以外，還需要那些新的活力泉源，來永續發展？以往中小企業，多以成本做為競爭優勢，而隨著外在環境的變遷與需求的日新月異，創新對於企業來說，已經成為一種必要的工具與手段。

透過探討從第一屆到第十四屆得到國家磐石獎廠商的中小企業，在組織創新中的管理創新與技術創新的各項作為與成果，甚至相關失敗因素，以做為中小企業在永續經營、創新發展的參考。

Poster-KS

蔡巨鵬 No Provided

培育終身的創造力

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摘要

探究創造力的意涵，以及創造力在個人和教育團體的發展。布朗寧說：「成功的絆腳石不是缺乏智力，而是沒有創造力。」文中會發現創造力是個人或團體以適當的方式表達自我的能力。超級天才的愛迪生，憑藉的並非智慧卓越，他甚至被認為是學習障礙者，而他的成功其實來自源源不絕的創造力。喜歡讀書但屢試不第的醫藥學家李時珍，編寫出不朽之作《本草綱目》，令後世一窺中醫精彩的奧妙；出口成章的徐霞客，廿二歲遊歷全中國，成了著名的地理學家；文學大師曹雪芹創作的《紅樓夢》，成了大家爭相研究的紅學，人們也忘了他是個功名道上的落第書生。心理學家研究發現，這些人都不一定是高智慧者，但卻是高創造力的人，不喜歡墨守成規，懂得固執己見，堅持到底。與其說他們是成功者，不如說是圓夢的人！如何運用想像力幫助人們發揮創意在他們的學習、工作、生活中產出更多更好的成果。另外，提到教育體系中可能有一些限制創造力發展的因素，以及阻礙創造力根深蒂固的文化習慣，尋找出發展教師、學生與學校更有創造力的行為與習慣，也可以發現創造力的教學與創意的教學兩者之間的差別，以及使用資訊傳播科技來增進創造力教學增加的成效。

創造力的概念，人生而來就蘊育了無限的想像力，但如何在一生之中去運用，帶給人們幸福，不管在何處語言、音樂、愛情、舞蹈、畫作、電影、3C日常生活中看見的聽到的可以觸碰的，每天裡都會有新的事物，這些都來至人們的創造力不管男女老少都有一種無法言語的力量，「人生如星辰或星塵，因為愛而發光因為恨而消逝。」這是日前作者所看的一部電影的感想，一個男人因為碰到了另外一顆星星（女人），因為相遇產生了愛，我想這是人生最美好的事物，因為真愛，所體會的感想，這也是種創造力。

智力可以換得好成績，但成就與否又是另一回事，創意跟創造不單如此，它們是會越磨越發光的能力，我想是吧！最後，期望大家能將創造力置於學生教學的核心，藉由蘊育充滿創意的心靈，促使我們能夠創造更美好的未來。

Poster-KS

洪峻彦 **No Provided**

創造力教學運用在數位藝術設計創作歷程之研究

陳貞好

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本研究運用創造力教學策略，針對某私立大學選修電腦繪圖課之學生進行為期兩學年的研究，探討學生在數位藝術設計創作歷程上的學習態度，採用準實驗研究法，研究對象為研究者分別在 95 學年度及 96 學年度擔任第一學期教學助理之班級學生，95 學年度的學生為控制組共 30 人，96 學年度的學生為實驗組共 31 人，比較實驗組與控制組，在有無運用創造力教學理論在數位藝術設計創作歷程之實施後是否有顯著的差異性。研究題目為：比較大學生接受創造力教學與否，其在數位設計創作歷程上的學習態度有何不同。研究工具及方式包含威廉氏創造思考教學模式、教學內容設計、態度評量問卷、質性資料分析，研究者將資料分類進行量化與質性分析，量化資料為學生基本資料問卷與態度評量問卷以 SPSS 統計軟體進行敘述統計與獨立樣本 t 檢定分析，質性資料部份為學習表單、及學生作品由研究者比對分析。

本研究結果為接受創造力教學之實驗組學生於流暢力層面、獨創性層面、變通性層面、方法論知識層面、理解層面、價值的接受層面、關係分析層面與元素分析層面皆 達顯著標準，受測者雖然來自不同學年度的學生，但同樣為同系大一新生且背景程度相似，實驗組在接受創造力教學後，其在數位藝術設計創作歷程的學習態度表現 整體而言優於控制組，故推論創造力教學的實施能夠增加學生在數位設計創作的正面態度。

關鍵詞：數位藝術、創作歷程、創造力教學

Poster-KS

陳貞好 李思欣 **No Provided**

生活科技創意課程對高中生創造力及科技態度影響 之研究

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摘要

本研究目的在於探討生活科技創意課程對高中生創造力及科技態度的影響。為有效達成研究目的，本研究採用之實驗設計為前、後測準實驗設計，共計進行八週，所使用之研究工具包含基本資料調查問卷、科技與科學素養量表、新編語文創造思考測驗、新編圖形創造思考測驗及科技態度量表，並蒐集樣本高一上學期之數學及國文的期末總成績為研究參考資料。研究對象為國立台中女中於 96 學年度修習生活科技課程的兩班學生，共計 91 名；隨機選取一班為實驗組，共計 44 名學生於生活科技課程中融入創造性問題解決之教學策略，另一組為控制組，共計 47 名學生於生活科技課程採用普通教學模式，為考驗研究假設及解釋資料，本研究採單因子多變項變異數分析、單因子多變項共變數分析、典型相關及 Paired-t 考驗等統計方法考驗研究假設。本研究主要之研究結果為：一、經常閱讀科技書籍及雜誌的學生，其在科技態度上顯著高於不經常閱讀的學生。二、科技素養高的學生其科技態度顯著高於科技素養低的學生。三、科學素養高的學生其科技態度顯著高於科學素養低的學生。四、國文成績、數學成績、科技與科學素養與科技態度有顯著相關。五、國文成績、數學成績、科技與科學素養與創造力無顯著相關。六、生活科技創意課程有助於提昇學生的科技態度。七、生活科技創意課程有助於提昇學生的語文創造力。八、生活科技創意課程有助於提昇學生的圖形創造力。

Poster-KS

王裕德 鍾明芬 **No Provided**



- 教學區
- 宿舍區
- 一般道路
- 禁行機車路段
- 車輛管制崗哨
- ☺ 餐飲服務
- P 停車場

▲ 柴山大路

會場

萬壽路
千光路

高雄港

國立中山大學
蓮海路

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教育部顧問室

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高雄市政府

主辦單位：

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承辦單位：

教育部顧問室創造力教育中程發展計畫

國立政治大學創新與創造力研究中心

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