混成式網路社群應用於大學藝術通識課程之研究

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摘要

　　資訊科技快速發展使教學型態產生變革。現今藝術通識課程學習方式與內涵，須因應數位時代而有所改變。本研究旨在探討混成式課程網路社群應用，對大學生藝術通識課程自我調整學習之影響，及其於 TA 教學、當代藝術課程設計之學習反應。本研究以 85 位大學藝術通識課程學生為對象，組成網路社群，並進行教學實驗。依據社群互動形態，將學生分為 TA(teaching assistant)實驗組及控制組，歸納研究結論為：(1)「TA 實驗組」模式有助於大學生藝術通識課程自我調整學習表現；(2)混成式課程網路社群有助於大學生藝術通識課程學習；(3)TA 教學有助於提升混成式課程之教學效能；(4)藝術通識課程應融入當代特色並結合理論與實務。最後，本研究對未來大學藝術通識課程設計與TA 教學提出建議。

關鍵詞：混成式課程、網路學習社群、藝術通識課程、自我調整學習、
　　　　教學助理

研究動機與目的

　　近年來藝術通識教育持續進行教學的創新與改革,因應數位時代的學習需求,e化學習與網路科技在教學之應用,可說是現今課程發展的重心。而通識課程的學生人數眾多,大班制教學環境限制及傳統單向式的講授教學,往往造成學生互動不足的問題。為此許多國內外大學於通識課程中,採用分組配合教學助理(teaching assistant,以下簡稱TA)制度之教學方式,以協助授課教師進行小組教學與討論活動。而由研究生擔任TA的工作,因具備專業能力及豐富的學習經驗,可成為學生模仿與學習的對象。Sweeney、O'Donoghue和Whitehead(2004)研究指出網路學習的輔助方式,已被視為因應高等教育課程的大班制教學需求之解決途徑,並提到TA在實體與網路課程教學的差異。哈佛大學通識教育報告研究亦建議融入議題討論、實作練習的課程設計及實施TA制度,以增進師生互動、協助並提升學生的學習興趣與成效(President & Fellows Harvard University, 2008)。而張玉茹（2009）指出混成式課程設計對學生的學習態度與成效有顯著正面的影響。因此,結合實體與網路教學的混成式課程模式已成為通識課程設計的趨勢,而TA在混成式通識課程的情境中,對學生學習之影響及其教學角色的差異,則有待進一步探討。

　　而在網路輔助學習歷程中,學生需培養更多自主性及善用學習資源以達成設定的學習目標,因此,教師如何運用教學策略以輔助並加強學生的自我調整學習,成為影響的關鍵。自我調整學習相關研究指出各項教學策略如:提供回饋、示範教學、同儕教師輔助等,能有效提升學生的學習動機、自我效能、後設認知等自我調整學習表現(Schunk, 2004; Pintrich, 2004; Zimmerman, 2000; Zimmerman & Tsikalas, 2005),惟需更多實徵研究以瞭解在藝術領域中,網路社群輔助對學生自我調整學習表現之影響。

　　此外,徐秀菊和黃秀雯(2005)指出藝術通識課程應能達到提升美感的鑑賞能力、批判思考的判斷力與創造力等更高層次能力的提升。趙惠玲和盧姵綺(2009)則認為,藝術通識課程的內容普遍以精緻藝術為主,缺乏當代藝術與視覺文化範疇之內涵。廖敦如(2009)提出大學藝術通識課程,應朝向大學生生活美感的實際應用,與行動學習、問題解決策略的融入。因此,藝術通識課程規劃範疇應延伸至當代文化與藝術之內涵,同時透過教學實驗結果以確知學生的反應。

　　緣於上述問題，本研究乃以大學生為研究對象，發展以當代藝術為主題內涵之通識課程，應用實體課程結合網路學習社群之混成式設計，並由TA擔任線上助教，以進行教學實驗。本研究目的在探究混成式課程網路社群應用對大學生藝術通識課程自我調整學習之影響，同時，探討TA在混成式課程的情境中，如何運用具體策略以有效協助學生的學習，以及學生對當代藝術通識課程之學習反應。因此，本研究問題如下：

　　(一)混成式課程網路社群對藝術通識課程自我調整學習之影響為何？

　　(二)在藝術通識課程中，大學生對混成式課程網路社群輔助學習與TA線上教學的反應為何？

　　(三)大學生對當代藝術通識課程內容與活動設計之學習反應為何？

文獻探討

混成式課程網路社群

　　混成學習的定義為傳統面對面學習與數位學習的混合學習方式，而混成式課程設計具有結合傳統課堂及線上教學之優點(Osguthorpe & Graham, 2003)。混成式課程設計方式多元，本研究採用以實體課程為主，加上課程網站、合作學習網路社群等數位學習方式輔助教學。而網路社群的理論基礎係源自於建構主義及其相關理論。Piaget(1970)的認知發展論主張個人會依據自己的先備知識及經驗，從與環境的互動中去調適以形成新知識或行為模式。而Vygotsky提出近側發展區(zone of proximal development，簡稱ZPD)概念，指學習者與成人或能力較佳的同儕合作，才能完成任務的能力(Vygotsky, 1978, 86)。ZPD概念可具體應用於網路之合作學習，如同儕互動、鷹架教學等策略。透過教師或學生專家的指導與帶領，在網路工具的輔助下進行小組合作學習，以提升學生的認知發展與學習表現。Bandura(1986)社會認知論(social cognitive learning)對人類的認知學習發展亦持相同觀點，認為人類的活動係「個人」、「行為」與「環境因素」三者之間的交互作用。

　　綜合上述，網路社群的合作學習為結合網路提供便捷的交流工具及小組學習的模式，對學習的影響可說來自模仿與觀察學習、分享討論的知識建構，及教師的示範教學與反思回饋。在網路社群的學習情境中，學生可觀察教師或同儕楷模的認知示範與行為，進而增進學生的學習動機與自我效能。

TA 輔助教學理論

在本研究通識課程場域，TA擔任實體課程活動與部落格網路社群線上教學的重要引導者。TA的輔助教學可說為透過同儕教學(peer tutoring)的方式進行。Topping(1996, 2005)指出TA與學生的年齡、學習背景相近，來自相同的社會團體，具有教學相長(learning by teaching)的作用。而TA的角色較相同年齡及學習階段的同儕更具學習經驗與專業知識，透過學生與TA之間互動過程，協助學生達到更高層次的發展水準與學習表現。

在本研究實驗組混成式課程網路社群中，TA參與並引導網路社群的運作，其角色如同「線上助教」，為影響學生學習表現之關鍵因素。Shepherd(2003)提到線上助教的三種角色：主題內容專家(subject expert)、教導者(coach)及評量者(assessor)，各項角色的主要職責如下：

1. 主題內容專家：線上助教必須熟悉數位學習課程的主題內容以呈現或設計數位教材或講義，提供課程需求或學生自學(self-study)，及作示範教學，此外，線上助教並擔任知識的供給者，提供課程相關資訊及連結、疑難解答(FAQ)，並為討論區、論壇等社群交流園地貢獻(contributing)發言。

2. 教導者：線上助教應負責提出問題以引導學生進行深度思考，傾聽學生的學習需求，對學生提供具體而建構性的回饋意見，及鼓勵學生持續的學習與自我管理，並協助學生設定挑戰性但可達成的學習目標以提升學習動機。此外，線上助教需隨時追蹤與監控(controlling)學生的學習狀況。

3. 評量者：線上助教需持續檢核與監控學生的學習情況並確保其完成學習任務。

而Salmon(2003)提出的線上中介者一詞，較重視「線上助教」在各種線上互動場域，如：討論區、同步或非同步的網路課程的教學。Salmon(2003)並將線上教學模式分為五階段：(1)引起動機(access and motivation)：歡迎社群成員加入，及進行數位學習環境教學；(2)社群交流(online socialization)：鼓勵並協助組織線上社群；建立成員間的歸屬感及相互的尊重；(3)資訊交流(information exchange)：引導線上社群討論的方向，使討論聚焦於學習任務本身及其關連面向、議題，並提供學習資訊；(4)知識建構(knowledge construction)：知識建構為高階互動層次，產生於社群成員間對於議題的探索與觀點的澄清與論辯，此時，線上助教的任務為協調溝通成員意見，以建立共

通的知識；(5)發展(development)：線上助教協助提升社群成員的批判思考能力，透過給予成員意見回饋，挑戰其觀點，以鼓勵更高層次的思考。

歸納上述，Shepherd(2003)及Salmon(2003)對線上助教的定義，本研究將TA在混成式課程網路社群的教學角色定義為「線上助教」，應用自身的美術專業知識背景，擔任主題內容專家，提供課業解說、學習資源，與協助學生解決疑難問題。而TA亦為教導者及評量者，給予學生表現深度而專業的回饋，以及隨時掌握學生的學習狀況，並適時提供協助。此外，TA更適時給予回饋或歸納要點，以利進一步的討論與探索。

自我調整學習理論探究

Pintrich和DeGroot(1990)指出認知和行為的自我調整為學習的重要因素，包含認知策略(複誦、精緻化、組織)、後設認知策略及努力管理與控制等。程炳林(1995)歸納多位學者之理論指出自我調整學習是一項主動建構的歷程，在此歷程中，學習者會根據對特定工作特性之覺察及對該工作的動機、情感設定學習目標，並以此目標來監督、控制、調整自己的認知、行動甚至情境。因此，自我調整學習視學習者會依據學習動機、建立學習目標、計畫學習內容、設定標準，並採用學習策略、監控學習進度，以努力完成學習任務，此學習歷程即為自我調整學習(林建平，2005)。

Zimmerman(2000)以社會認知的觀點詮釋自我調整，指出自我調整是學習者在學習過程中後設認知、動機及主動參與程度；後設認知是指學習者在學習歷程中進行規劃、組織、自我教導、自我監控及自我評價等歷程；動機是指學習者感知自己的能力是否能勝任該學習任務；而行為是指學習者在學習活動進行歷程中選擇利於學習的學習環境。因此，本研究的自我調整學習是指學習者在學習過程中，運用各種學習策略及方法調整和監控學習活動的進行，以幫助自己完成學習任務。本研究並以修訂之「自我調整學習量表」，測量學習者在藝術領域課程之學習動機變化，與認知、資源管理策略之運用情形。

相關文獻

在混成式課程與網路社群應用研究中，特別重視探討TA教學對提升學生自我調整學習成效之影響。如Van den Boom、Paas及Van Merriënboer(2007)以84位遠距教學的學生為對象，探討TA給予深度回饋結合反思提示的教學模式，與同儕回饋模式之差異。結果發現TA模式的實驗組在自我調整學習、學習態度與學習成果皆優於同儕回饋模式的學生。Cheng和Ku(2009)應用互動式

同儕教學模式(reciprocal peer tutoring)於資訊課程中，結果顯示同儕教學的合作學習方式有助於提升學生的學習動機。Thurston、Duran、Cunningham、Blanch和Topping(2009)亦發現同儕教學結合網路平台的互動形式，能有效輔助國際語言交換的學習。而De Wever、Van Keer、Schellens及Valcke(2009)以135位大一學生為對象組成之非同步網路討論社群輔助教學，並比較角色扮演及同儕教師兩種模式對學生知識建構之影響，結果顯示同儕教師模式對學生知識建構有正面的幫助。此外，近來混成式課程相關研究均指出：在課程融入問題解決之學習任務設計、網路討論社群及學習歷程檔案建置，有助於資訊分享與意見交流，進而提升學生的學習動機與成效(Kember, McNaught, Chong, & Cheng, 2010; Yeh, Huang, & Yeh, 2011; Yen & Lee, 2011)。

綜合上述，本研究混成式課程網路社群係基於建構主義的理論基礎而架構的合作學習網路社群模式。在「TA實驗組」混成式課程網路社群中，強調TA的教學輔助功能，將小組TA設定為「線上助教」及「線上中介者」，為藝術學科內容專家、教學者及評量者，且為線上活動的主持、意見協調者。TA扮演混成式課程網路社群線上教學的關鍵引導與教學者，主動帶領網路社群之運作，設計並實施各種線上活動。藉由實體結合網路社群混成式教學的實施，以探討在藝術通識課程情境中，大學生的自我調整學習表現與對TA教學之學習反應。

研究方法與實施

研究設計

研究對象

本研究對象為某大學藝術鑑賞通識課程選修學生共85人。本課程採混成式設計，包含實體課程及網路社群教學，組織部落格網路社群，以輔助學生進行藝術通識課程學習，依據混成式課程網路社群模式，將學生隨機分派至本通識課程網路社群，含TA實驗組44人及控制組41人。

研究架構

本研究採用因子設計(factorial design)之準實驗研究法，研究架構如圖1所示。
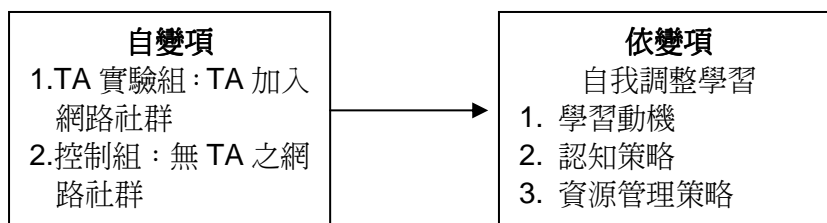
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圖 1　實驗設計架構圖

　　本研究自變項為混成式課程網路社群型態，分為TA實驗組與無TA參與之控制組。在TA實驗組混成式課程網路社群中，由具藝術專業背景及教學經驗之研究生擔任小組TA，參考Salmon(2003)提出線上助教五階段教學模式，含「引起動機」、「社群交流」、「資訊交流」、「知識建構」及「發展」，設計並實施各種線上活動，並配合課程發展具體實施策略，如：提供作業範例與解說、分享學習資源與連結、適時鼓勵與回應學生表現、參與社群討論並給予反思型深度回饋及發起討論區，提出深度議題以激發學生的批判思考等。因此，TA在實驗組網路社群中，具備「線上助教」與藝術領域內容專家角色，為線上教學的引導者。此外，TA並從旁協助指導學生課業與資訊平臺使用的疑難問題。而在控制組，TA不參加課程網路社群，僅從旁協助問題解決，主由學生相互觀摩交流。本研究並藉由學生的課程回饋單與課後訪談資料分析，以了解大學生對當代藝術通識課程之學習反應。

藝術通識課程設計

　　本研究發展「藝術鑑賞：臺灣當代藝術與視覺文化」通識課程內容以作為正式教學實驗課程，共規劃有四大主題，分別為「當代藝術鑑賞導論」、「臺灣當代藝術鑑賞」、「臺灣當代視覺文化」、「小組專題創作」。而教學活動設計方面，除配合課程單元之「課堂討論」活動，另安排兩次美術館參觀，及三次「藝術家面對面」系列講座。本藝術通識課程目的在於學生藝術與視覺文化素養的提升及高層次的思考訓練，以及網路社群共構學習教學策略的融入。

　　而本課程為結合實體課程及部落格網路學習社群教學的混成式課程設計，除線上教學外，在實體課程部分，由TA協助引導小組課堂討論及創作活動，並提供課業諮詢。「課堂討論」活動的設計為以當週授課內容為主題，安排議題討論或互動式的小組活動，並在課程結束前進行小組課堂討論報告或展

演，使學生能即時將理論講授課程的概念轉化為實務的討論與呈現，並激盪出更多創意性的想法，而小組專題創作活動設計亦然，鼓勵學生以分組創作方式，觀察當下臺灣視覺文化現象，選擇探討議題，規劃創作計畫，解決所遭遇問題，並分工合作協力完成作品，學生得以將課程所學進行反思，並於創作中實踐。

研究工具

自我調整學習量表

本研究之自我調整學習量表係參考Pintrich和Degroot(1990)所編製的「學習動機與學習策略量表」(Motivated strategies for learning questionnaire，簡稱MSLQ)改編製為適合藝術領域學習之自我調整學習量表。本量表含「學習動機」、「認知策略」、「資源管理策略」三個分量表，含學習動機11題、認知策略11題及資源管理策略8題，共計30題。本量表採用五點量表之作答形式，由「完全不符合」到「完全符合」的連續選項，分別給予1、2、3、4、5分，填答的分數愈高，代表在各向度有較佳的表現，整體量表之Cronbach's α= .94，內部一致性係數合乎理想。

藝術通識課程回饋單及訪談大綱

本研究為探討大學生對混成式課程網路社群學習的反應，於課後實施回饋單，並採立意選取方式，由本研究TA實驗組及控制組學生中選擇訪談對象，透過面對面訪談及MSN線上交談等方式，進行半結構式訪談，以深入了解實驗自變項—混成式課程網路社群與TA線上教學對學生藝術通識課程學習反應之影響。

研究流程

本教學實驗課程為期14週，一週二節課，共100分鐘。在實驗前三週進行藝術鑑賞導論與實驗課程網站平臺、小組部落格使用教學等實驗準備，第四週開始正式實驗課程。本研究蒐集資料包含：「自我調整學習量表」前後測、學生課程回饋單等，並由修課學生中徵詢有意願者進行課後訪談，含TA實驗組9人及控制組4人，共計13人，以瞭解學生對混成式課程網路社群學習的反應。最後，綜合量化數據與質性資料進行分析，歸納結論提供大學藝術通識課程設計與實施的參考。

研究結果

藝術通識課程自我調整學習表現影響之分析

　　本研究依據學生在實驗課程實施前後所填寫的「自我調整學習量表」進行分析，有效樣本共85人，探討不同的混成式課程網路社群模式，對學生在本教學實驗課程實施前後，自我調整學習表現的影響。自我調整學習之多變量變異數考驗結果，在主效果分析方面，混成式課程網路社群模式達顯著水準(Wilks' Λ = .610,p＜.05,η2 = .390)，顯示在不同的混成式課程網路社群模式中，兩組學生在自我調整學習表現上，至少有一個面向的平均數有顯著差異。

表 1　混成式課程網路社群之自我調整學習各分量表之平均數、標準差

	向度名稱	題數	TA實驗組(n=44)		控制組(n=41)	
			平均數	標準差	平均數	標準差
學習動機	自我效能	3	1.363	1.058	.804	1.435
	主動學習	5	2.977	2.510	1.097	2.177
	藝術學習價值	3	2.045	1.669	1.122	1.568
認知策略	批判思考	5	3.477	2.757	.951	2.097
	後設認知	6	3.136	2.637	1.365	2.861
資源管理策略	資源管理	3	1.772	1.492	.487	1.885
	同儕學習	3	1.704	1.636	.317	2.054
	尋求協助	2	1.409	1.335	.073	.984

註：N=85

　　如表1所示，自我調整學習之「學習動機」、「認知策略」及「資源管理策略」描述統計結果，在「學習動機」方面，TA實驗組學生在自我效能(TA實驗組mean=1.363，控制組mean=.804)、主動學習(TA實驗組mean=2.977，控制組mean=1.097)，及藝術學習價值(TA實驗組mean=2.045，控制組mean=1.122)三面向皆優於控制組的學生。在「認知策略」方面，TA實驗組的學生於批判思考(TA實驗組mean=3.477，控制組mean= .951)、後設認知(TA實驗組mean=3.136，控制組mean=1.365)皆優於控制組的學生。在「資源管理策略」方面， TA實驗組的學生在資源管理(TA實驗組mean=1.772，控制組mean=.487)、同儕學習(TA實驗組mean=1.704，控制組mean=.317)、尋求協助(TA實驗組mean=1.409，控制組mean=.073)皆優於控制組的學生。

表 2 自我調整學習各分量表之多變量變異數分析摘要表

變異來源		型Ⅲ平方和 (SS)	自由度 (df)	平方和 (MS)	F檢定 (F)	顯著性 (Sig.)
學習動機面向	自我效能	5.815	1	5.815	3.788	.055
	主動學習	76.215	1	76.215	13.639**	.000
	藝術學習價值	19.690	1	19.690	7.494**	.008
認知策略面向	批判思考	130.626	1	130.626	21.538**	.000
	後設認知	63.598	1	63.598	8.258**	.005
資源管理面向	資源管理	32.135	1	32.135	11.272**	.001
	同儕學習	38.694	1	38.694	11.736**	.001
	尋求協助	37.352	1	37.352	26.245**	.000

* $p < .05$ ** $p < .01$

　　而如表2所示，自我調整學習各分量表之多變量變異數分析結果，在「學習動機」方面，混成式課程網路社群模式在自我效能面向接近顯著水準($F(1,81)=3.788$, $p= .055$)，在主動學習($F(1,81)=13.639$, $p< .05$)、藝術學習價值($F(1,81)=7.494$, $p< .05$)面向達顯著，表示混成式課程網路社群模式對學生「自我效能」、「主動學習」、「藝術學習價值」有顯著影響。在「認知策略」方面，批判思考($F(1,81)= 21.538$, $p< .05$)、後設認知($F(1,81)=8.258$, $p< .05$)面向皆達顯著水準，表示混成式課程網路社群模式對學生的批判思考、後設認知有顯著影響。在「資源管理策略」方面，資源管理($F(1,81)=11.272$, $p< .05$)、同儕學習($F(1,81)=11.736$, $p< .05$)、尋求協助($F(1,81)=26.245$, $p< .05$)面向均達顯著水準，表示混成式課程網路社群模式對學生的資源管理、同儕學習、尋求協助及資源管理策略整體表現有顯著影響。

　　因此，實驗結果顯示在「TA實驗組」混成式課程網路社群中，由TA擔任之「線上助教」進行各項教學策略對學生的自我調整學習發揮了極為明顯而正面的功效。如在TA鼓勵與引導下，除能提升學生參與社群討論分享的動機，並更積極主動發表自己的想法與創見。而TA給予的反思性回饋能協助學生進行高層次認知策略運用，如導向批判思考的觀點與後設認知的省思。此外，TA線上教學策略如：學習任務的示範與解說、提供相關學習資源、提醒教學進度

等課程注意事項，使學生更了解如何進行時間管理，並設法尋求TA及同儕等管道的學習支援，以幫助自己解決課業疑難，有效提升學習資源管理的能力。

藝術通識課程學習反應

本研究歸納課程回饋單及課後訪談資料[1]，共收集課程回饋單有效樣本80份，含TA實驗組43份及控制組37份，課後訪談學生共13位，含TA實驗組組9位及控制組4位，以瞭解學生在混成式課程網路社群輔助學習及藝術通識課程設計的意見，分述如下：

混成式課程網路社群輔助學習

在「小組部落格社群」部分，學生普遍提到部落格的交流功能，因為通識課程的修課學生來自各不同系所，缺乏課後交流的管道，而小組部落格提供便捷的互動環境，使學生得以隨時進行討論與交換意見，及分享學習資源。：

> 小組部落格讓課後的我們與課程內容更緊密的連結，可以快速的瀏覽同學的意見與心得，或者把自己的想法透過部落格的方式表達給大家知道(S43)。

> 我覺得使用部落格交作業相當便利，可以很快速繳交作業且可以瀏覽觀摩其他同學的作業，有時候忘記一些課程中提到的重點，看了別人的作業之後就會想起來…同時也不需交紙本，老師也可以直接瀏覽網路改作業(SI20100128)。

而網路社群對藝術通識課程學習的幫助方面，學生表示在社群意見的交流有助於提升批判思考能力，並可參考他人的經驗以快速累積知識能量，以激發更多想法：

> 參與小組 Blog 社群可以欣賞組員分享的文章，了解多元的看法，以增進自己對於其它藝術作品的批判能力，能藉著「迴響文章」的功能，與組員一起討論、分享，可以知道更多藝術家與作品，並了解他人如何剖析作品的內容(SI 20100130＃02)。

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[1] 本研究將學生回饋單與課後訪談資料分別進行編碼註記，通識課程回饋單的部分為依據資料排序編碼，如S01表示編號01學生的回饋意見，而學生課後訪談資料的註記包含訪談日期及受訪學生編號，如：SI201001125＃01表示2010年1月25日編號01之受訪學生。

我覺得用 Blog 分享的方式還不錯，可以讓很多人都看到成果，還可以不斷修正，踩在巨人的肩上看世界的感覺很好(SI20100121)。

此外，學生提到助教與其他社群成員的回饋意見成為其積極發表文章的動力，不僅形成良性的互動學習循環，並對未來的思考及學習模式產生自信及正面的助益：

每個人的思考模式不相同，可藉由他人的迴響看到自己所沒察覺到的。這對於我所在的系和未來的出路有很大的幫助，因為我走的是設計。迴響意見多少會影響到我的思想，可以讓我的思考範圍更大，畢竟設計不能只限在一個小框框裡，對吧 (SI201001125＃02) ！

TA 之課堂與線上教學角色差異與影響

在本研究課程中，TA於實體課程及「TA實驗組」網路社群，扮演引導教學的重要角色，學生認為在課堂上與TA交流互動很頻繁，而TA參與小組部落格社群的討論活動，更引領學生主動積極學習的意願，如學生提到：

TA 幫助同學對於課程更了解，協助同學完成每次的作業和任務，參與討論給予啟發。在部落格方面，TA 會在部落格上提供參考資料或藉由參與討論，啟發同學在部落格上發表文章或回應，並督促同學繳交作業(S33)。

在實體課堂教學的部分，TA課堂教學著重於「輔導者」及「協助者」的角色。學生表示TA不會過度介入或主導討論活動的進行，而是從旁觀察並適時給予協助及鼓勵，在小組討論遭遇瓶頸或無法達成共識時，提供思考的方向或協調、歸納整體的意見：

我覺得 TA 滿常給我們一些方向的引導，在討論的時候，他通常會等我們先講完，再介入我們的討論給予引導，例如小組創作時，一開始大家都沒有想法，他會給我們一個滿明確的目標，但並不是非常完整，而是讓我們自己把它構想出來(SI201001125＃01)。

　　而學生普遍肯定TA的專業性，除協助課堂教專業的疑難解答，在小組創作時，TA提供的專業意見及技術指導，不僅協助非美術專業的學生解決創作的問題，亦成為指引創作靈感及作品呈現方式的助力：

> TA 會從旁指導我們，提供實際的建議，比方說創作的時候，雖然題材等是自己想，他會建議具體的作法，因為美術系比較知道實際上要怎麼運用材料及作法(SI20100116＃03)。

　　而由「TA實驗組」組學生訪談內容與回饋意見，可深入了解在「TA實驗組」模式的網路社群中，TA線上教學策略對於學生藝術通識課程學習的影響。學生於訪談中表示TA發表文章具有帶領的作用，能鼓勵同學更積極發表並參與討論，主動迴響自己的意見，同時，學生提到由於提供專業的作業指導及深度的回饋意見，TA在小組部落格社群的教學角色如同專家，而在實體課程則較像是學習夥伴般融入群體的討論活動：

> 我覺得 TA 在課堂活動時，像協助者，討論時會適時補充他的觀點，聚焦大家的意見…在部落格裡會比較像專家，意見比較專業，而 TA 在部落格發表的作業示範文章很有幫助，會滿想模仿 TA 的文章，例如對作品的詮釋觀點很有深度…TA 對作品的詮釋不會影響到我的觀點，但是會幫助我們提綱挈領、歸納出重點(SI20100116＃04)。

　　例如學生訪談內容提及在當代藝術議題的討論過程中，TA的迴響使得學生改變以往對「藝術」與「美」的既有觀念，轉變為更開放的角度以接納當代藝術與視覺文化的多元性，及各具特色的表現方式，亦較能思考當代藝術背後的深層意涵：

> TA 對展覽的迴響令我印象深刻，我們的迴響中有討論到當代藝術的話題，就像上次去看展覽，大家都覺得看了之後很空虛，不知道藝術家在做什麼？因為也不一定很漂亮，有一些作品甚至以血腥暴力為主題，或者嘲諷時事之類的，當代藝術比較強烈挑戰視覺極限，有種為反對而反對的感覺…那時 TA 有迴響討論藝術美的問題，變得比較不會排斥當代藝術，也敢提出其他的觀點(SI 20100116＃01)。

　　同時，學生並指出TA與同學迴響意見的差異，表示TA的回饋較專業且具深度，如同專家能引導深度的思考，亦期望獲得TA的迴響肯定，將其視為迴響的動力來源，同學的意見則較偏向個人經驗並多為正面迴響：

> 首先，TA 在每一篇文章都會作迴響留言，在他留言提出問題後，下面就會有更多同學再留言回覆，這樣會使其他同學更有迴響的動力…我會看別人對我的文章的迴響，但我覺得最重要的影響還是 TA 給的迴響 (SI 20100125＃01)。

> TA 迴響會引導我們進入比較深入層面的思考，同學迴響都比較正面…TA 的專業當然有，但不會讓人有無法理解的內容，有時候專業會讓人覺得嚴肅，但 TA 的完全不會(SI 20100125＃02)。

　　由學生反應得知，TA的角色在混成式課程的兩個教學場域：實體課程及線上教學，產生角色定位與工作重心的差異。對學生而言，TA在小組部落格社群的教學角色如同專家，而在實體課程則較像是學習夥伴般融入群體的討論活動。在實體課程中，TA以旁觀者的角度觀察學生的學習情況，並適時給予學習支援，或提醒學生課程的進度與注意事項，透過面對面的接觸，融入學生的學習活動並即時給予學生回饋及指導。因此，TA的實體課程教學著重於「輔導者」及「協助者」的角色。而TA的線上教學角色則因原實驗設計之「專家」角色發揮預期教學效果，TA透過具體的教學策略如：發表作業範例、引導討論及反思型回饋等，提供較課堂引導更深入的教學內容。惟因不同的互動的型態而與實體課程產生差異，由於TA線上教學，需透過迴響及發表文章等文字形式、線上活動的設計，並通過網路平臺以傳達實施，因此教學內容較具組織並能突顯其專業知能。

　　整體而言，TA線上教學偏重於深層的討論引導，因此更著重在「引導討論」及「意見協調者」角色，本研究與Sweeney、O'Donoghue及Whitehead(2004)的研究結果一致，TA的線上教學角色無法完全取代實體課程的教學功能與情感交流。而De Smet、Van Keer、De Wever和Valcke(2010)指出在TA訓練課程中，結合線上教學模式及教學策略的設計，能有效提升TA自我評價，帶領學生達成高階層知識建構等教學目標與自我效能。因此，在兼有實體及線上教

學內容的混成式課程中，TA的教學設計與實施應彈性結合二者的優點，而TA之教學訓練更應加強資訊輔助教學能力之培訓。

藝術通識課程設計

1. 藝術通識課程單元設計

　　本研究令學生最感興趣且印象深刻的課程單元統計結果，排序依次爲「臺灣數位藝術」、「性別議題與臺灣當代藝術」、「臺灣網路視覺文化」及「臺灣當代流行視覺文化」。其中，在「臺灣數位藝術」單元部分，學生提到數位藝術形式的多元性打破以往對藝術表現狹隘的認知框架。而透過數位影音教學資源的運用，學生表示更能認識與體會數位藝術與觀眾互動的特質。同時，數位藝術作品營造出眞實虛幻交錯的奇幻景象與效果，使學生感受到前所未有的視覺感官刺激，除增長數位媒體應用的知識，也讚嘆新興科技與藝術的巧妙結合的創意，例如：

> 我很喜歡課堂上老師播放的那些互動科技藝術的影片，尤其是觸控式的聲音裝置，藉由手的溫度感應聲控系統使其撥放出音樂甚至多個元件的組合可以排列出不同的音樂，我覺得很棒(S09)。

　　「臺灣網路視覺文化」單元獲得E世代學生許多的共鳴，學生表示身處於網路資源發達的世界中，網路早已入侵日常生活，扮演極爲重要的角色。但頻繁地接觸網路卻甚少思考網路文化的影響，透過課堂提出的網路視覺文化範例與議題，如造成風潮的Facebook社群網站、部落格、網路論壇所流通的網路視覺影像與話題，幫助其重新深入思考、分析相關議題與視覺文化的價值。而對於「臺灣當代流行視覺文化」單元，學生表示流行視覺文化可說無所不在，因此容易忽略而流於盲目的從眾。透過相關理論的介紹與議題討論，除能了解流行文化的意涵，對流行文化現象觀察較以往敏銳而深入，且能對流行文化進行批判觀點的思考。如學生提到：

> 流行文化似乎是短暫的，而老師所說的話也讓我們進一步得去思索流行文化的深度，所謂的高尚、品味等等和每個穿戴他們的人的心理串連起來(S20)。

　　此外，學生表示性別議題經常被邊緣化或漠視，藉由藝術家的創作自述與藝術作品中呈現的性別意象，除使學生深層了解性別議題，及深刻的體悟，更因此自省產生性別互重的思考態度。如學生表示：

> 性別面向的當代藝術作品表現的批判性思考震撼人心，尤其強烈的性別象徵符號的運用令人印象深刻，使我反省自身對女性的態度，並學會尊重(S21)。

2. 藝術通識課程活動設計

　　在本通識課程的活動中，令學生印象最深刻且最感興趣的部分，排序依次爲美術館參觀、專家演講、小組創作及課堂小組討論。在「美術館參觀」活動部分，學生表示以往相當缺乏美術館參觀經驗，亦缺少吸收藝文資訊的管道。對臺灣當代藝術知識的貧乏，欠缺導覽人員解說等因素均影響參觀的意願。學生認爲能有機會到美術館親身接觸當代藝術作品，且表示安排專業的導覽人員解說能協助其了解作品的背景知識，深入體會藝術家的創作意涵。而「專家演講」的部分，本課程特別安排設計「藝術家面對面」系列講座，邀請目前活躍於藝壇之當代藝術家，至課堂分享與暢談創作的心路歷程。學生提到藝術家親身講述個人的創作經驗及生命故事，予其深刻的印象與體會：

> 專家演講對我們幫助很大的一點就是可以把專家的作品和本人的談吐風格等等串連在一起，尤其是○○○老師的演講，她雖然在年輕的時候做了那麼多批判性和前衛的攝影作品，但是本人看來卻像是一個令人值得敬重的老師…(S14)。

　　同時，學生認爲由藝術家本人分享的創作經驗更爲直接而可貴，可以了解藝術品的原創觀點及創作歷程，並因此增加藝術欣賞的敏銳度。學生表示：

> 過去在看藝術家的作品，總是以自己的角度欣賞，即便有解說也是零星的拼湊，透過藝術家本身以歷史時間的走向來介紹作品與創作想法，感覺與作品更有互動(S37)。

在「小組創作」及「課堂討論」的部分，整體而言，學生普遍認同分組合作學習的型態，並體認到團隊合作的優點與價值。如學生提到：

> 通識課是認識不同系別同學最好的方法，因受過的訓練不同可能會有不同的思考方式與創意，使自己的思緒觀點更多元，也能增進彼此的感情(S08)。

結論與建議

結論

本研究歸納混成式課程網路社群應用對大學生藝術通識課程自我調整學習表現的影響，及其於混成式課程網路社群、TA教學、當代藝術通識課程之學習反應，獲致四項研究結論，分別論述如下：

「TA 實驗組」社群模式有助於大學生藝術通識課程自我調整學習表現

本研究結果顯示，TA協助之實驗組混成式網路學習社群對大學生藝術通識課程的自我調整學習有顯著影響，因此，在「TA實驗組」模式的網路社群中，TA線上教學策略已發揮預期的教學效果，對學生的自我調整學習之動機、認知、資源管理策略表現產生極為明顯而正面的影響。如TA適時鼓勵與回應的情感支持，營造群體感的社群氛圍，有效提升學生的參與社群的動機，而反思型回饋則協助學生的批判思考與後設認知等高層次認知策略運用，此外，線上討論活動的引導、即時的學習支援、學習資源分享等有助於學生的資源管理能力，並增益整體自我調整學習發展。

混成式課程網路社群有助於大學生藝術通識課程學習

研究結果顯示在科技的輔助下，混成式課程網路學習社群可改善大班制通識課程缺乏互動的缺點，學生表示網路社群與資訊平臺有助於與外系同學溝通，透過跨領域的交流，擴展個人的視野與想法，而學生亦表達藉由小組合作學習方式，感受到學習夥伴相互支持與資源分享等群體學習的助益，在討論與創作過程中，學生表示受到肯定而得到的成就感，使其更能投入通識課程的學習。

TA 教學有助於提升混成式課程之教學效能

本研究結果顯示，TA在混成式課程的兩種教學場域：實體課程與網路社群，產生不同的角色特質與教學效益，在實體課程中，透過面對面的交流，TA給予學生正面而直接的回饋，包含團隊情感的支持鼓勵與適時的引導輔助，而網路社群的TA角色，則因互動型態不同，帶領線上社群的分享與討論，並給予深刻反思回饋，目的在於激發學生的批判思考等高階層知識共構，因此，TA在實體課程與線上社群的教學皆對學生產生實質的教學成效，未來應整合實體課程與線上社群TA的優點，融入於混成式課程的TA輔助教學設計中，以使學生得到全面性的學習輔助與指導。

藝術通識課程應融入當代特色並結合理論與實務

在藝術通識課程設計方面，本研究課程以台灣當代藝術與視覺文化為主要內涵，並依據廣度的內容與深度的探索，兼顧理論與實務之多元活動設計，反映當代社會與藝術文化思潮，善用資訊科技提升學習效率等原則，規劃本研究課程內容與教學活動，使學生透過「美術館參觀」、「專家演講」、「課堂討論」、「小組創作」等多元的活動設計，及當代藝術與視覺文化的介紹與議題探索，不僅擴展目前藝術通識課程教學內涵的範疇，獲得學生正面的評價，對學生的藝術通識課程學習亦產生實質助益，並改變學生對通識課程的既定想法，本研究課程設計的實施成果可供大學藝術通識課程規劃設計之參考。

省思與建議

而本研究發現藝術通識課程內容設計的問題，在客觀因素方面，囿於通識課程的授課時數，僅能於一學期的時間進行課程安排，教學範圍受到必然限制，而學生背景多元性亦增加教學設計之複雜度，由於藝術通識教學對象設定為非藝術科系學生，其藝術學習經驗與藝術領域知能，難以確知與評估。此外，藝術通識課程定位含混不明亦造成課程設計的困難，就全人教育的角度而言，藝術通識課程之內容範疇應與學生以往藝術課程學習進行連結，惟以高等教育課程而言，亦需具備相當的深度，因此，權衡教學內容的專業深度及通識課程學生程度，即成為藝術通識課程設計需解決的課題。

此外，研究結果顯示TA為引導網路社群的關鍵核心，在實體課程與線上教學皆擔任重要的引導角色。在網路社群的教學的部分，TA的深層引導策略更是影響教學成效的重要因素，突顯出資訊應用教學在TA教育訓練課程中的

重要性。因此，TA教育訓練內容除傳統實體課程引導教學外，應更注重資訊
應用的層面，如加強資訊平台應用、網路與數位典藏學習資源應用、線上教學
策略等相關知能，以因應日新月異的科技發展。歸納本研究結果，混成式課程
網路社群應用的重心在教學策略研發與教學領域內容的配合，及善用科技工具
以輔助學習。如本研究課程以小組合作學習的方式融入課堂及網路社群，以增
進學生的交流與分享，並於課堂與線上教學中，藉由當代藝術與視覺文化議題
的設計以引導討論，及分組專題創作等教學策略與活動之實施。配合網路共享
與協作平台，使學生在教師的引導協助下，形成知識分享與共構的學習網絡，
進而達成促進學生高層次思考的目的。因此，混成式課程網路社群的學習方式
確有助於學生的學習，而教學設計與策略應用則為影響學生學習表現及獲致良
好教學成效的關鍵。

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附錄一：訪談大綱

一、您覺得小組 Blog 社群對本學期藝術通識課程學習的主要影響與幫助有哪些？

二、您對「小組 Blog 的互動迴響方式」有哪些想法？對您藝術通識課程的學習主要幫助有哪些？

三、您的「小組 Blog」使用心得與經驗有哪些？(例如：曾遇到的問題、小組 Blog 的優缺點等)；您認為在小組 Blog 社群中還能增加哪些方式，以協助學習？

四、「小組 TA」在 Blog 社群中對您藝術通識課程學習的影響與收穫有哪些？「小組 TA」在 Blog 社群中提供您的引導與協助有哪些？具體的方式有哪些？您建議以後「小組 TA」可以加強的部分有哪些？

五、對本學期的藝術通識課程，還有哪些是您想分享或建議的部分？

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Abstract

The quickly development of information science and technology changed the type of teaching. Today, the mode of learning and contents of general arts curriculum needed to respond the requirement of learning in the digital generation and has to be revised. This study aims to investigate the influence of blended curriculum web-based community on self regulation in arts general education for undergraduates as well as their learning responses on TA teaching and the design of general arts curriculum. Eighty-five students of an art appreciation curriculum participated in the study. Based on different models of web-based communities, this study categorized the students into "TA empirical group" and control group. Results of this study are as follows: (1) the "TA empirical group" model facilitates self-regulated learning performance; (2) the blended web-based community is helpful to undergraduates' learning in arts general curriculums; (3) TA teaching is beneficial in enhancing the teaching efficiency of a blended curriculum; (4) the design of general arts curriculum should include modern art theories and practices. Finally, based on the results of the study, suggestions are proposed regarding the designs of university general curriculum and arts, TA teaching, etc.

Keywords: Blended Curriculum, Web-based Learning Community, General Arts Curriculum, Self-regulation, Teaching Assistant

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Introduction

In recent years, general arts education has continuously undergone innovation and reform in response to the learning needs of the digital era; the application of e-learning and web-based technology to teaching can be regarded as the core of current curriculum development. The large number of students enrolled in general curricula results in large class teaching, which is a limitation of the teaching environment, and the adoption of traditional one-way lectures, thus contributing to insufficient interaction of teachers and students. Hence, both domestic and international universities with general curricula utilize a teaching assistant (hereinafter referred to as TA) system to assist teachers to conduct group teaching and discussion activities. Graduate TAs, due to their professional abilities and rich learning experiences, can be learning role models for the students. Sweeney, O'Donoghue and Whitehead(2004)pointed out that web-based learning, as an aid method, has been regarded as a solution to the demands of large-class teaching in higher education, and discussed the differences between face-to-face and web-based curriculum teaching. Harvard's General Education Report also recommended the inclusion of issues for discussion, the curriculum design of hands-on activities, and the implementation of a TA system to improve interactions between teachers and students, as well as to assist and enhance learning interest and efficacy of students(President & Fellows Harvard University, 2008). Chang (2009) concluded that a blended curriculum design has a significant positive influence on the learning attitude and efficacy of students. As a result, the blended curriculum model that integrates face-to-face and web-based teaching has become the trend of the curriculum design of general education. The TA's influence on the students' learning and the difference in the teaching role of the TA in the scenario of a blended curriculum deserve further discussion.

During the web-assisted learning process, students need to be cultivated with more autonomy, and taught to make the best use of learning

resources in order to achieve the set learning objectives. Thus, it is critical for teachers to adopt teaching strategies to assist and improve students' self-regulation. As shown in relevant studies on self-regulation, various teaching strategies, such as feedback provision, teaching demonstrations and the assistance of peer teachers can effectively improve the performance of self-regulation, including learning motivation, self-efficacy and the metacognition of students (Schunk, 2004; Pintrich, 2004; Zimmerman, 2000; Zimmerman & Tsikalas, 2005); however, more empirical studies are required to understand the influence of web-based learning community assistance on students' performance of self-regulation in the arts field.

Additionally, Hsu and Huang (2005) suggested that the general arts curriculum should help to improve higher level abilities of art appreciation, critical thinking and creativity. Chao and Lu (2009) believe that fine arts, in the content of general arts curricula, lack modern arts and visual culture. Liao (2009) proposed the actual application of the aesthetics of university life to general arts curricula of universities to integrate action learning and solution strategies to solving problems. Consequently, general arts curriculum planning should extend to the contents of modern culture and arts; at the same time, through teaching experimental results, the responses of students can be confirmed.

Hence, this study investigates university students as the research subjects to develop general curricula with the subject contents of modern arts, combining face-to-face curriculum and web-based learning community into a blended curriculum design, with the use of an online TA in a teaching experiment. The purpose of this study is to explore the influence of the application of web-based learning community with a blended curriculum on the self-regulation of university students in a general arts curriculum and, at the same time, to examine how TAs in the scenario of a blended curriculum use concrete strategies to effectively assist students to learn, as well as the learning responses of students to modern arts curriculum. The research questions to be addressed are as follows:

1. What is the influence of a web-based learning community with a blended curriculum on the self-regulation of a general arts curriculum?
2. In a general arts curriculum, how do university students respond to the learning assistance of a web-based learning community with a blended curriculum and online teaching by TAs?
3. How do university students respond to the learning of curriculum contents and the activities design?

Review of literature

Web-based learning community with a blended curriculum

Blended learning was defined as the synthesis of traditional classroom learning and digital learning, and a blended curriculum design combines the advantages of traditional face-to-face and online learning (Osguthorpe & Graham, 2003). There are diversified methods of blended curriculum design, and this study uses the face-to-face curriculum to incorporate curriculum websites and web-based cooperative learning to assist teaching; the theoretical foundation of web-based community is derived from constructivism and relevant theories. Piaget's theory of cognitive development (1970) argues that individuals will use their own prior knowledge and experience to regulate and form new knowledge or behavioral models through interactions with the environment. Vygotsky proposed the concept of zone of proximal development (ZPD), and that suggested the successful achievement of tasks requires peer cooperation between learners and adults or those who are more competent (Vygotsky, 1978, 86). The ZPD concept can be concretely applied to web-based cooperative learning, such as strategies of peer interaction and scaffolding teaching. Under the instruction and guidance of teachers or student experts, group cooperative learning is conducted with the assistance of web-based tools to improve the cognitive development and learning performance of students. Bandura (1986) proposed social cognitive learning and held the

same perceptions towards the correlation of "individual", "behavior" and "environmental factor" that dominates human activities.

In short, the cooperative learning of a web-based community integrates convenient communication tools provided by the Internet as well as a group learning model. The influences on learning stems from imitation and observational learning, knowledge co-construction via sharing and discussion, and demonstration teaching and reflective feedback of teachers. In the learning scenario of a web-based community, students can improve their learning motivation and self-efficacy by observing cognitive demonstration and behavior of teachers or peer models.

Theories related to the TA teaching

In the general curriculum field of this study, the TA is an important guide for face-to-face curriculum activities and blog web-based online teaching. The teaching assistance of a TA is conducted via peer tutoring. Topping (1996, 2005) pointed out the benefits of a learning community that is of similar age and learning background to that of the TA. The TA has more learning experience and professional knowledge than students' peers of the similar age and at similar learning stage. Via the interaction between students and TA, students are assisted to achieve higher development and learning performance levels.

In the experimental group of a web-based learning community with a blended curriculum in this study, the TA participated in and guided the operation of a web-based community whose role is like that of an "online tutor", a key factor in the learning performance of students. Shepherd(2003)proposed three roles of online TA: subject expert, coach and assessor; their respective main responsibilities are described below:

1. Subject expert: An online TA must be familiar with the subject contents of digital learning curriculum in order to present or design digital teaching material or handouts for curriculum needs or the self-study by students and demonstration teaching. Additionally, the online TA is also the knowledge provider who provides relevant information and links to

curriculum and FAQ, as well as contributes to discussions in the community's online forum to facilitate community communication.

2. Coach: The online TA shall be in charge of initiating questions to guide students into more in-depth thinking, listening to the learning needs of students and providing concrete and constructive feedback opinions, encouraging students in continuous learning and self-management, and assisting students in setting up challenging but achievable learning objectives to enhance their learning motivation. Furthermore, the online TA needs to track and control the learning state of students from time to time.

3. Assessor: The online TA needs to continually inspect and monitor the learning state of students and make sure that the learning tasks are achieved.

Salmon (2003) suggested the term "mediator", that focuses more on the various fields interacting with an online TA, such as forum and synchronous or non-synchronous curriculum teaching. Salmon (2003) classified the online teaching model according to five phases: (1)access and motivation: students joining the community are welcome, and teaching in a digital learning environment is conducted; (2)online socialization: the establishment of web-based social communities is encouraged and assisted; the sense of belonging and mutual respect among members is cultivated; (3)information exchange: the direction of discussions of the online learning community is guided to focus more on learning tasks and relevant dimensions and issues, and learning information is provided; (4)knowledge construction: knowledge construction is a higher level of interaction that is generated via clarification and arguments made by learning community members towards issues and perception, in which the task of the online TA is to assist with the communication of members in order to build common knowledge; (5)development: the online TA assists learning community members to cultivate critical thinking abilities, and via feedback to group members, the TA challenges them in order to encourage them to engage in more profound thinking.

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In sum, according to the definition of an online tutor suggested by Shepherd (2003) and Salmon (2003), this study defines the teaching role of a TA in a web-based learning community with a blended curriculum as the online TA who applies his/her own professional arts knowledge background to play the role of expert of subject contents, to provide curriculum instruction and learning resources, and to assist students in troubleshooting. The TA is both coach and assessor who gives professional feedback in regard to the performance of students, monitors the learning state of students from time to time and provides assistance when necessary. Moreover, the TA provides timely feedback or summarizes important points for further discussion and exploration.

Exploration of self-regulation theories

Pintrich and DeGroot(1990) pointed out the importance of the self-regulation of cognition and behavior as the important factors of learning, including cognitive strategies (rehearsal, elaboration and organization), metacognition strategies, and effort management and control. Chen(1995)summarized theories of various scholars and proposed self-regulation as the process of active construction; during the process, learners will base their observation of work characteristics, motivation and emotions to set their learning objectives for further monitoring, controlling and regulating of self-perception, actions, or even scenarios. As a result, self-regulation, based on learning motivation, involves establishing learning objectives, planning the learning contents, setting up standards and adopting learning strategies for monitoring learning progress, in order to achieve learning tasks. The above learning process is referred to as self-regulation(Lin, 2005).

Zimmerman(2000)used social cognition to interpret self-regulation and pointed out that self-regulation includes the metacognition, motivation and the level of active participation of learners in the learning process; metacognition is the process in which a learner plans, organizes, self-instructs, self-monitors and self-evaluates his/her learning; motivation is

the perception of a learner towards his or her ability to achieve learning tasks; and behavior is how a learner chooses the optimal learning environment during learning activities. Thus, self-regulation in this study is regarded as how a learner uses various strategies and methods to adjust and monitor learning activities during the learning process in order to assist himself/herself to complete learning tasks. This study also modifies the "self-regulation scale" to measure learning motivation changes as well as the cognition and resources strategies of learners in arts curricula.

Relevant literature

In the studies on the application of blended curriculum with a web-based learning community, the special focus has been placed on the influence of the TA on the improvement of self-regulation effectiveness. Van den Boom, Paas and Van Merriënboer(2007), for example, studied 84 students engaged in distance learning to examine the differences between the teaching model of the TA who gave in-depth feedback and reflective instruction and the peer feedback model. They discovered that students in the experimental group of the TA model outperformed those of the peer feedback model in self-regulation, learning attitude and learning results. Cheng and Ku(2009)applied a reciprocal peer tutoring model to information curriculum; the results indicated that the cooperative learning with peer tutoring helps to improve the learning motivation of students. Thurston, Duran, Cunningham, Blanch and Topping(2009)also found that the integration of the peer tutoring interaction form and the web-based platform can effectively facilitate the learning in regard to international language exchanges. De Wever, Van Keer, Schellens and Valcke(2009)investigated 135 freshmen as the subjects in teaching assistance to a non-synchronous web-based learning community and compared the influence of two models: role play and peer teachers, on the knowledge construction of students. The results showed that the peer teacher model makes a positive contribution to the knowledge construction of students. Furthermore, recent studies on blended curriculum also point out that the inclusion of problem solving in the

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design of learning tasks, an online forum of a learning community and the building of student learning portfolios help in the sharing of information and exchange of opinions, as well as improve learning motivation and effectiveness of students' learning (Kember, McNaught, Chong & Cheng, 2010; Yeh, Huang & Yeh, 2011; Yen & Lee, 2011).

As mentioned above, the web-based learning community in a blended curriculum in this study is a cooperative web-based learning community model constructed on the theoretical foundation of constructivism. In the "TA experimental group" of the web-based learning community in a blended curriculum, the focus is on the teaching assistance function of the TA, so each group TA is set as an online TA and online mediator who is the subject expert, coach and assessor of arts curriculum, as well as the host and opinion negotiator of online activities. The TA plays the role of key guide and instructor of online teaching for a web-based learning community with a blended curriculum to actively direct the functioning of the web-based learning community, as well as to design and implement online activities. Through the implementation of the blended face-to-face teaching and web-based learning community, we examine the learning response of the self-regulation of university students to TA teaching in the scenario of a general arts curriculum.

Method

Research design

Participants

This study investigates 85 students who took a general curriculum of Arts Appreciation in a university. The curriculum adopts a blended design including face-to-face and web-based learning group teaching to organize Blog webs to assist students to learn a general arts curriculum. According to the model of the web-based learning group with a blended curriculum, students were assigned randomly to online social webs of the general

curriculum, consisting of 44 in the TA experimental group and 41 in the control group.

Research setting

This study adopts a factional design of semi-experiment research method with research setting shown in Fig. 1.

```
┌─────────────────────────────┐        ┌─────────────────────────────┐
│   Independent variable      │        │   Dependent Variables       │
│                             │        │     Self-Regulation         │
│ 1. TA experimental group:   │        │                             │
│    The TA participated in   │──────▶ │ 1. Learning motivation      │
│    the web-based learning   │        │ 2. Cognitive strategies     │
│    community.               │        │ 3. Resources management     │
│ 2. Control group: The TA    │        │    strategies               │
│    did not participate in   │        │                             │
│    the web-based learning   │        │                             │
│    community.               │        │                             │
└─────────────────────────────┘        └─────────────────────────────┘
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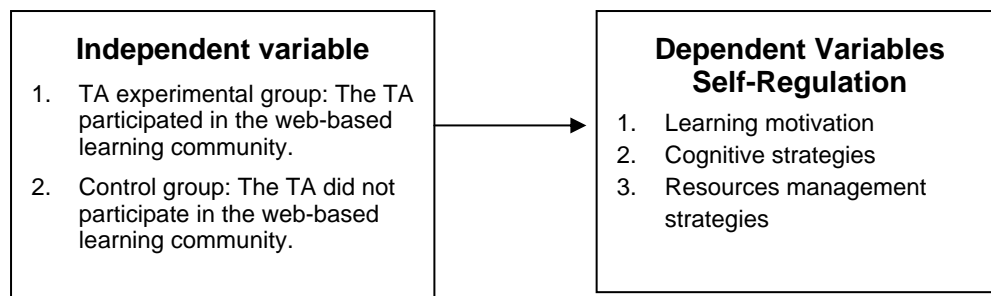
Fig. 1   Experimental design

The independent variable of this study is the web-based learning community with a blended curriculum with the division of the TA experimental group and non-TA control group. In the TA experimental group of the web-based learning community with a blended curriculum, a graduate student with an arts professional background and teaching experience took the position of Group TA and referred to the five-stage model for teaching and learning online proposed by Salmon(2003): "access and motivation", "online socialization", "information exchange", "knowledge construction" and "development" to design and implement various online activities and to incorporate with curriculum development and concrete measures, such as the provision of operational examples and explanation, sharing learning resources and website links, encouragement and feedbacks to student performance, participation in learning community discussion, offering of reflective in-depth feedbacks and initiation of discussions to propose issues to inspire critical thinking of students. Thus, the TA in the experimental group of the web-based learning community played the role of online TA, subject

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expert of the arts field, and the guide for online teaching and learning. Additionally, the TA could assist students in problems they may face regarding their studies and the use of the information platform. In the control group, the TA did not participate in the web-based learning community and only provided assistance to problem solving. Students mainly learned from mutual exchanges. This study uses feedback sheets of students and interviews after classes to analyze and understand learning responses of university students to a general arts curriculum of modern arts.

Design of a general arts curriculum

This study develops the contents of "Art appreciation: Taiwan's modern arts and visual culture" general curriculum as the formal teaching experimental curriculum under four topics: "Introduction to modern arts appreciation", "Appreciation of Taiwan's modern arts", "Taiwan's modern visual culture" and "Group project presentation". In terms of teaching activities design, in addition to the incorporation of "classroom discussion" activities, two field trips to a museum of modern arts and three seminar series on "face to face with artists" were arranged. The purposes of this general art curriculum are to enhance the arts and visual cultural literacy of students, higher level of thinking training, and the inclusion of the web-based learning community teaching strategy.

The curriculum integrates the blended classroom curriculum and blog web-based learning community. In addition to online teaching, the TA assisted in guiding group discussion and creative activities as well as providing learning assistance in the classroom curriculum. The design of "classroom discussion" was based on the lecture contents of the week for groups to discuss or interact with each other; before the end of each class, groups had the chance to discuss together or make presentations, thereby enabling students to transform lecture concepts into practical discussion and brainstorm more creative thoughts. Group presentation was designed with the same principle, by encouraging students to work with groups, observe the current phenomena of Taiwan's visual culture, select issues for

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discussion, plan their creative projects, solve problems encountered and collaborate to complete their projects. Students had the chance to reflect on what they had learned and put it into practice in their creation.

Instruments

Self-regulation scale

The self-regulation scale used in this study refers to motivated strategies for learning questionnaire (MSLQ)compiled by Pintrich and Degroot(1990)for the modification of learning measurement in arts field. The scale consists of "learning motivation", "cognitive strategies" and "resources management strategies" including 11, 11 and 8 questions respectively, for a total of 30 questions. The scale adopts a five-point measurement ranging from 1 to 5 points for "completely not matched" to "completely matched" respectively. The higher scores indicate better performance in each aspect and the Cronbach's $\alpha= .94$ shows ideal internal consistency.

Feedback form and interview outlines of a general arts curriculum

This study investigates the responses of university students to a blended curriculum with a web-based learning community, and feedback forms were distributed after classes with the adoption of purposive sampling from students in the TA experimental group and control group. Face to face interviews and MSN online chatting were used for semi-structured interviews, in order to understand the influence of web-based learning community with a blended curriculum and online teaching by a TA on the learning response of students to a general arts curriculum.

Procedure

This experimental curriculum lasted for 14 weeks, two classes per week lasting 100 minutes. The first three weeks of the experiment were used for the experimental preparation to introduce arts appreciation, the platform of the experimental curriculum, and group blogs. In the 4th week, the experimental curriculum formally began. Data collected by this study include: pre-test and post-test of "Self-regulation scale" and feedback forms filled by

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students; 13 volunteers were taken for interviews after classes, including 9 from the TA experimental group and 4 from the control group to understand the responses of students to the web-based learning community with a blended curriculum. In the end, both quantified and qualified data are analyzed to provide conclusion as the reference for the design and implementation of general arts curriculum in universities.

Results

Analysis of the influence on self-regulation performance of a general arts curriculum

According to the "Self-regulation scale", this study analyzed the pre-test and post-test of students conducted before and after the curriculum implementation with 85 effective samples to address the influence of different web-based learning communities with a blended curriculum on the self-regulation performance of students before and after the implementation of the experimental curriculum. An ANOVA on self-regulation scales revealed the significant main effect of web-based learning community of blended curriculum（Wilks' Λ = .610, $p<.05$, η^2 = .390）.

Table 1　Means and standard deviations of measures on self-regulation scales

Scale	Section	Item	TA experimental group (n=44)		control group (n=41)	
			M	SD	M	SD
Learning motivation	Self-efficacy	3	1.363	1.058	.804	1.435
	Actively learning	5	2.977	2.510	1.097	2.177
	Learning beliefs of arts	3	2.045	1.669	1.122	1.568
Cognitive strategy	Critical thinking	5	3.477	2.757	.951	2.097
	Meta-cognitive strategy	6	3.136	2.637	1.365	2.861
Resource management strategy	Resource management	3	1.772	1.492	.487	1.885
	Peer learning	3	1.704	1.636	.317	2.054
	Help seeking	2	1.409	1.335	.073	.984

Note. N=85

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Table1 presents the means and standard deviations of measures on self-regulation scales. On the learning motivation aspect, the students in TA experimental group show better on self-efficacy(M=1.363), actively learning(M=2.977), and learning beliefs of arts(M=2.045) than the control group. On the cognitive strategy aspect, the students in TA experimental group present better on critical thinking (M=3.477) and meta-cognitive strategy (M=3.136) than the control group. On the resource management strategy aspect, the students in TA experimental group show better on resource management (M=1.772), peer learning (M=1.704), and help seeking (M=1.409) than the control group.

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Table 2   Analysis of Variance for self-regulation scales

Source		SS	df	MS	F	Sig.
Learning motivation	Self-efficacy	5.815	1	5.815	3.788	.055
	Actively learning	76.215	1	76.215	13.639**	.000
	Learning beliefs of arts	19.690	1	19.690	7.494**	.008
Cognitive strategy	Critical thinking	130.626	1	130.626	21.538**	.000
	Meta-cognitive strategy	63.598	1	63.598	8.258**	.005
Resource management strategy	Resource management	32.135	1	32.135	11.272**	.001
	Peer learning	38.694	1	38.694	11.736**	.001
	Help seeking	37.352	1	37.352	26.245**	.000

* $p < .05$ ** $p < .01$

Subsequently, Students' development on aspects of self-regulation scales was analyzed at the level of the three scales(see Table 2). An ANOVA on the learning motivation aspect revealed no significant for self-efficacy（$F(1,81)$=3.788, $p = .055$）, and significant difference for actively learning（$F(1,81)$=13.639, $p < .05$）as well as learning beliefs of arts （$F(1,81)$=7.494, $p < .05$）. On the cognitive strategy aspect, an ANOVA revealed significant difference for critical thinking（$F(1,81)$= 21.538, $p < .05$） and meta-cognitive strategy（$F(1,81)$=8.258, $p < .05$）. On the

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resource management strategy aspect, an ANOVA yielded significant difference for resource management（$F_{(1,81)}$=11.272, $p < .05$）, peer learning（$F_{(1,81)}$=11.736, $p < .05$）, and help seeking（$F_{(1,81)}$=26.245, $p < .05$）.

Therefore, the experimental results showed a significant and positive effect of the TA as the online TA in the "TA experimental group" of a web-based learning community with a blended curriculum, with various teaching strategies for the self-regulation of students. With the encouragement and guidance of the TA, students improved their motivation to participate in group discussion and sharing, and actively expressed their thoughts and creative insights. The reflective feedbacks given by the TA can assist students in demonstrating higher cognitive strategies, such as the introduction to critical thinking perspectives and reflection of metacognition. Additionally, TA's online teaching strategies include demonstration and instruction of learning tasks, provision of relevant learning resources, the reminder of the teaching schedule, and allowing students to solve their own learning problems in order to effectively improve students' ability to manage learning resources.

Learning response to general arts curriculum

This study summarizes the data derived from feedback sheets and interviews after class[1] and collects 80 effective samples of feedback sheets, including 43 from the TA experimental group and 37 from the control group. We interviewed 13 students after class, including nine from the TA experimental group and four from the control group, in order to understand the opinions of students regarding the learning assistance of web-based learning community with a blended curriculum; the design of the general arts curriculum is described below:

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[1] This study assigns numbers to feedback sheet and after-class interview data of students. Feedback sheets of the general curriculum is partly numbered according to data serial; for example, S01 shows 01 as the feedback of 01 student and that of after-class interview includes interview date and number of students interviewed; for example, SI201001125＃01 shows student 01 received the interview on January 25, 2010.

Learning assistance of a web-based learning community with a blended curriculum

In regard to the "blog learning community", students often mentioned the exchange function of the blog because students taking the general curriculum come from different departments, and lack exchange channels after class. Group blog provides a convenient interactive environment for students to discuss and exchange opinions from time to time and share their learning resources.

> Group blog gave us closer links between us and curriculum contents. We can quickly browse the opinions and sharing of peer students or post our thoughts on blog to share with others.（S43）

> I think it is quite convenient to hand in assignments via blog. I can turn in assignments quickly and browse the assignments of other peer students. Sometimes I may forget points mentioned in classes but after viewing others' assignments, I will be reminded…at the same time; I do not need to hand in paper copies and the teacher can directly browse and correct assignments online.（SI20100128）

In terms of the benefits of a web-based learning community for the learning of a general arts curriculum, students mentioned the help in improving critical thinking abilities, and they were able to refer to others' experiences to quickly accumulate knowledge, and were inspired with more thoughts:

> The participation of a blog learning community allows members to share our writing and to understand diversified thoughts. The critical thinking ability of ourselves for other artworks is improved. We are able to use the "feedback article" function to discuss and share with group members, and we are able to know more about artists and artworks as well as how others analyze work contents.（SI 20100130＃02）

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I think that sharing on blog is a good idea that allows many people to view the results, and continuous modification becomes possible. Seeing the world from the shoulder of a giant is a good feeling.（SI20100121）

Additionally, students mentioned that the feedbacks from the TA and other group members drove them to actively post articles. It not only forms a good interactive learning cycle but also helps to produce confidence and benefits future thinking and learning models:

Each of us has different thinking models and in others' responses, we are able to know what we ignored. This helps me greatly for thinking about the department I am studying in and my future plans. Because I major in design, feedback opinions influence my thoughts and expand my horizon. After all, design cannot be limited in a small box.（SI201001125＃02）

Differences and influences of the role of the TA in face-to-face and online teaching

In this study, the TA played a very important role in teaching guidance in both the face-to-face curriculum and "TA experimental group" of a web-based learning community, and students thought that the frequent exchanges and interactions with the TA in the classroom and the TA's participation in group blog discussions also guided students to actively learn. As mentioned by a student:

TA helps students to understand the curriculum better, and assists students to complete each assignment and task, and the TA participates in discussions and inspires us. In terms of the blog, the TA on blog provides reference information or, via the participation in blog, the TA inspires peer students to post articles or to give feedbacks. The TA also reminds us to turn in assignments.（S33）

In classroom teaching, the TA focused more on the role as coach and facilitator. Students mentioned that the TA does not over interrupt or dominate discussions but observes and provides in-time assistance and encouragement. When group discussions encountered bottlenecks or failed to reach a consensus, the TA provided new thinking directions or mediation by summarizing overall opinions:

> I think that the TA often gives some guidelines. During discussion, he often waits until we finish and then gives us the guidance. For example, during a group project, at the beginning, we did not have any thoughts and he gave us a clear direction. It was not very complete, but it enabled us to have a better development. （SI201001125＃01）

Students normally recognized the professional abilities of TA. In addition to the assistance to professional knowledge and problem solving in class, the TA provided his professional thoughts and technical instruction during a group project not only to help non arts majors to solve problems but also to inspire them and to guide work presentation:

> The TA assists us and provides practical suggestions. For example, during a group project, although we came up with the topic by ourselves, he provides us with more concrete thinking since he majors in arts and knows better how to practically use materials and thoughts in creation. （SI20100116＃03）

From the interview contents and feedback opinions of students in the "TA experimental group," we are able to understand the influence of the TA's online teaching strategies on the students' learning of a general arts curriculum in web-based learning community in this model. During the interviews, students mentioned the inspiration of the TA for posting articles as well as the encouragement for students to more actively express themselves and participate in the discussions. At the same time, students mentioned the professional assignment guidance and in-depth feedback

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opinions of the TA, and perceived the TA as the expert in the teaching role of a blog web-based learning community. In the face-to-face curriculum, the TA is more like a learning partner involved in the discussion activities of the group:

> I think that the TA, during classroom activities, is like a facilitator; during discussions, he adds his opinion and helps us to focus on our opinions… On the blog, he acts more like an expert and gives professional opinions. The TA is quite helpful for demonstrating assignments on blog and that inspires me to write more like he does. For example, he gives an in-depth analysis of artwork…the TA's interpretation of artwork does not influence my views but helps to guide us to come up with outlines and key points.（SI20100116 ＃04）

For example, during interviews with students and discussion of issues on modern arts, the TA's feedbacks changed students' perceptions towards arts and aesthetics. Students became more open to accept the diversity of modern arts and visual culture as well as their unique ways of expression. They were able to reflect on the deeper meanings behind modern arts:

> The TA's feedbacks on the exhibition impressed me very much. In our feedbacks, we discussed modern arts. After visiting the exhibition, we felt nothing and had no idea about the work of the artist. The artworks are not always beautiful, and some even are bloody or critical of current issues. Modern arts strongly challenge visual limits; they disagree with others just because they want to disagree…When the TA gives feedbacks to arts and aesthetics, I feel like I am not against modern arts, and I am able to raise other perspectives.（SI 20100116＃01）

At the same time, students pointed out the difference between feedbacks given by the TA and peer students. They recognized the professional and more in-depth feedbacks of the TA. The TA is more like an

expert who can guide others to more in-depth thinking, and students expect that they can also be recognized by the TA in the feedbacks. They regarded the feedback as driving their improvement. Opinions of students came from personal experiences and they gave positive feedbacks:

> First of all, the TA gives feedback to each article. After his response, more peer students give theirs. This inspires others to express themselves more… I view responses of others to my article, but I think the most important influence comes from the feedbacks given by the TA. （SI 20100125＃01）

> The TA's feedbacks guide us to begin more in-depth thinking and feedbacks given by peer students are more positive…of course; the TA is more professional and the contents of his feedbacks can be fully understood. Sometimes professionalism is serious, but the TA's feedbacks are not serious. （SI 20100125＃02）

From the responses of students, we can understand the difference of role definition and work focus in two teaching fields of the blended curriculum: face-to-face curriculum and online teaching. For students, the TA in the group blog web-based learning community was more like an expert; in the classroom curriculum, the TA integrated into a group discussion as a learning partner. In the classroom curriculum, the TA monitored students' learning as an observer and gave learning assistance or reminded students to pay attention to the curriculum schedule and points of attention. Via face to face contact, the TA integrated the learning activities of students and provided real-time feedbacks and instruction. Thus, the TA in classroom curriculum teaching focused on the role of facilitator and assistant. The online teaching role of the TA has the expected teaching effect due to the experimental design of the role of expert. The TA, through concrete teaching strategies such as the publication of assignment sample, discussion guide and reflective feedbacks provided more in-depth guidance of teaching contents. Differences occur due to the different type of interaction of online

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teaching compared to that of the classroom curriculum; for teaching online, the TA needed to use the text form of feedbacks and articles posted, and online activities designed to convey thoughts via the platform. Thus, the teaching contents are more organized and better demonstrate his professional competence.

In general, the TA's online teaching focused more on the guidance of in-depth discussion, the roles of "discussion guide" and "opinion mediator." Results of this study confirms the theory that the online teaching role of the TA cannot completely replace the teaching function and emotional exchanges in a face-to-face curriculum(Sweeney, O'Donoghue & Whitehead, 2004). De Smet, Van Keer, De Wever and Valcke（2010）pointed out that during the TA's training curriculum, the combination of online teaching model and teaching strategy design can effectively improve the self-evaluation of the TA. Students, thus, can be guided to achieve higher levels of teaching objectives and self-efficacy, such as knowledge construction. As a result, in the blended curriculum of face-to-face and online teaching contents, the TA's teaching design and implementation should flexibly combine the advantages of both, and the TA's teaching training should focus on information technology assist teaching abilities.

Design of a general arts curriculum

1. Design of general arts curriculum units

This study, according to unit statistics, ranks curriculum units that interest and impress students from the most to the least as "Taiwan's digital arts", "Gender issue and Taiwan's modern arts", "Taiwan's internet visual culture", to "Taiwan's modern pop visual culture." Among them, in the unit on "Taiwan's digital arts", students mentioned about the diverse forms of digital arts break the traditional narrow perception towards limited arts expression. Via the use of digital audio and video teaching resources, students said they are better able to understand and appreciate the features of interaction between digital arts and the audiences. At the same time, digital artworks create combined virtual and reality fantastic images and effects to allow

students to enjoy the fresh sensual excitement. They were cultivated with the knowledge of digital media application and amazed with the creativity combined with new technology and arts. For example:

> I like the interactive technology and arts films screened by the teacher in class, especially, the touch audio installation. Through the temperature of the hand, the audio system is initiated to play music; with multiple component combination, different pieces of music can be played. I felt amazed! （S09）

"Taiwan's internet visual culture" received good responses from students of Generation E; they said they are living in a world with convenient Internet resources, and that the Internet has pervaded their daily life and plays an important part. But the frequent contacts to the Internet do not give them the chance to think of the influence of Internet culture. Through examples and issues of Internet visual culture raised in class, such as those related to the pop Facebook social medial, blog and online forums, they were able to rethink and analyze the value of relevant issues and visual culture. For "Taiwan's modern pop visual culture", students responded that pop visual culture is omnipresent and that ignorance will lead to the blind following others. Through the introduction of relevant theories and issue discussion, they were able to understand the contents of pop culture as well as to cultivate more in-depth observation abilities and to develop critical thinking. As mentioned by one student,

> Pop culture seems transient and changeable. But what my teacher said leads us to think more about the depth of pop culture, and to have a broad understanding of the so-called high fashion, taste and psychology of those involved . （S20）

Furthermore, students reported that the gender issue is often marginalized or ignored. Through the creative descriptions of artists and

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gender image presentation in artworks, the students were able to understand the gender issue more profoundly; thus, they reflected upon their attitude to gender. As said by one student,

> The gender dimension in critical thinking of modern artworks shatters us; especially, the strong use of gender symbols is very impressive and enables me to reflect on my attitude toward women, and I learned about respect. （S21）

2. Activity design of a general arts curriculum

In the activities of this general arts curriculum, students were interested and impressed (sequentially, from the most to the least): visit to the museum of arts, expert seminar, group work and group discussion in class. In "visit to the museum of arts", students said that before, they lacked visiting experience to the museum of arts and information on arts and culture. Factors, including the poor knowledge of Taiwan's modern arts and the unavailability of tour guides, influence their willingness to visit the museum of arts. Students thought that personal contact with modern artwork via the visit to the museum of arts and the arrangement of professional tour guides helped them to learn the background knowledge and appreciate the creative contents of artists. For "expert seminar", this curriculum arranged a "face to face with artists" seminar series by inviting modern artists who are still part of the art field to share their creative journeys with students. Students mentioned that personal creative experience and life stories of artists told in person left them with a deep impression and realization:

> The expert seminar gives the most benefits to link the artwork of experts and their personal style. Especially, for the lectures of Teacher ◯◯◯, although during her youth, she did a lot of criticizing and avant-garde photography work, she looks like a respectable teacher… （S14）

At the same time, students thought the sharing of creative experience by artists in person is direct and valuable. They were able to understand the creations and journeys of artists from an original perspective. As reported by one student,

> In the past, I looked at artwork from my personal perspective, and even through the interpretation of an expert, I tried to summarize all my scattered thoughts. Through the introduction of artists in person to their artwork and creative thoughts in a chronological manner, I feel more interactive with artworks.（S37）

For "group work" and "class discussion", students generally recognized the importance of cooperative learning in groups as well as the advantages and value of teamwork. As one student mentioned,

> The general curriculum allows us to know peer students from different departments. Because different trainings give us different ways to think and to create, the general curriculum enables me to cultivate more diversified thinking and to interact with others better.（S08）

Conclusion and Suggestion

Conclusion

This study concludes with the influence of the application of web-based learning community with a blended curriculum on the self-regulation of university students in a general arts curriculum, as well as their learning responses to a web-based learning community with a blended curriculum, TA teaching and general modern arts curriculum. There are four conclusions proffered below:

The "TA empirical group" model facilitates self-regulated learning performance

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As shown in the research results, the experimental group of a web-based learning community of blended curriculum with TA assistance has a significant influence on the self-regulation of university students in a general arts curriculum. Thus, in the "TA experimental group" of a web-based learning community with a blended curriculum, the TA's online teaching strategies achieved the expected teaching results as they have a very significant and positive influence on motivation, cognition and resources management strategies of the self-regulation of students. If the TA gives proper encouragement and responds with emotional support in time to create the collective atmosphere, he can effectively improve the motivation for students to participate in the group, while reflective feedbacks help students to apply higher levels of cognition strategies such as critical thinking and metacognition. Additionally, the guide to online discussion activities, real-time learning support and the provision of learning resources all benefit the resources management abilities of students, and help students to self-regulate their learning development.

The blended web-based community is helpful to undergraduates' learning in arts general curriculums

As shown in the research results, with the assistance of technology, a web-based learning community can counter the drawback of insufficient interaction in large-class general curriculum. Students reported the benefits of a web-based learning community and information platform for achieving better communication with students from different majors. Through interdisciplinary exchanges, students can broaden their horizons. Students also said that they receive learning benefits such as mutual support from learning partners and resources sharing with each other via cooperative learning in groups. During discussions and a group project, students expressed that the recognized achievements helped them to be more concentrated in the learning of general curriculum.

TA teaching is beneficial in enhancing the teaching efficiency of a blended curriculum

As indicated by the research results in this study, the TA in the two teaching fields of blended curriculum, "classroom curriculum" and "web-based learning community," produces two different role types of teaching efficacy. In the classroom curriculum, through face to face exchanges, the TA gave students face-to-face and direct feedbacks, including emotional support and in-time guidance to the group, while in the web-based learning community, the TA, due to different interaction type, guided the web-based learning community to share and discuss. He also gave in-depth reflective feedbacks with the purpose to inspire higher levels of knowledge construction by inspiring students to develop critical thinking abilities. Thus, TA's teaching in a classroom and web-based learning community produces substantial teaching efficacy. In the future, the advantages of the TA in the classroom and web-based learning community should be integrated in the design of TA teaching in blended curriculum in order to give students comprehensive learning assistance and guidance.

The design of general arts curriculum should include modern art theories and practices

In terms of the design of a general arts curriculum, this study focuses on the contents of Taiwan's modern arts and visual culture; based on the exploration of contents and depth, we designed diversified activities in consideration of both theories and practice to reflect social and art cultural thinking and to make the best use of information technology to improve learning efficiency. The curriculum contents and planned teaching activities included: "visit to the museum of arts", "expert seminar", "class discussion", "group project" as well as introduction and issue exploration to modern arts and visual culture. Students were helped to broaden their horizons regarding the existing scope of teaching contents of a general arts curriculum, and the curriculum received positive evaluation from the students. Substantial benefits were produced for the learning of students in general arts curriculum, and the conventional thoughts of students about the general curriculum were changed. The implementation results of the curriculum design in this study

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can serve as the reference for the design of general arts curriculum in universities.

Reflections and suggestions

Problems of content design of general arts curriculum in this study, objectively, are limited to the teaching hours of the general curriculum. Activities should be arranged according to the schedule of one semester, and this also applies to the teaching scope. The diversified backgrounds of students also increase the complexity of the teaching design; because the teaching subjects of general arts curriculum are non-art major students, it is difficult to confirm and evaluate their art learning experience and competencies. Additionally, the unclear positioning of the general arts curriculum also brings more difficulties to the curriculum design. For a holistic education, the content scope of the general arts curriculum should be linked to the past learning of students in arts curriculum; but for higher education, this should be designed in depth. Therefore, the balance between professionalism of teaching contents and the level of students in the general curriculum is an issue that needs addressing in the design of general arts curriculum.

Furthermore, as shown in the research results, the TA is the key to guiding a web-based learning community. In both face-to-face curriculum and online teaching, the TA plays an important guiding role. In terms of teaching in a web-based learning community, the in-depth guidance strategies of the TA has been demonstrated to be an important factor that influences teaching efficacy, and this punctuates the importance of the application of information technology to the TA's educational training. As a result, in the TA's educational training contents, in addition to guided teaching in the traditional classroom curriculum, more emphasis should be put on the application of information technology competencies, such as the utilization of information platform, the application of the Internet and digital archives learning resources, as well as online teaching strategies to respond to the increasingly advanced technology development.

In conclusion, the focus of the application of a web-based learning community with a blended curriculum should be placed on the incorporation of R&D of teaching strategies and teaching field contents, as well as the utilization of technology tools to assist the learning process. This study uses group cooperative learning in a classroom and web-based learning community to enhance exchanges and sharing by students. In both face-to-face and online teaching, issues on modern arts and visual culture are designed to guide the discussion, and teaching strategies and activities such as group projects are implemented. By incorporating online sharing and coordinative platform, students are guided by teachers to develop a learning network for knowledge sharing and co-construction to further advance students' higher thinking level. Thus, the web-based learning community with a blended curriculum does help students to learn. The teaching design and strategic application should be the key to influence the learning performance of students and achieve good teaching efficacy.

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Appendix 1: Interview Outline

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1. What are the main influences and benefits of group blog for your learning in the general arts curriculum during this semester?
2. What do you think of "interactive feedbacks of group blog? What are the benefits for learning in the general arts curriculum?
3. What are your thoughts and experiences of "group blog?" (For example, problems encountered and pros and cons of group blog); what are the methods you think should be added to group blog to assist your learning?
4. What influences and benefits do you receive from "Group TA" in the blog community for your learning in the general arts curriculum during this semester?
   What guidance and assistance does the "Group TA" provide for you in the blog community? What are the concrete methods? What will you suggest to enhance the "Group TA"?
5. Is there anything else you want to share or comment on for the general arts curriculum during this semester?