

出國報告 (出國類別：國際會議論文發表)

International Conference on Business and Information
Approach of Applying Social Collaborative
Tagging in Instructional Assessment for
Computer Based Training

服務機關：臺中技術學院多媒體設計系

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會議名稱：International Conference on Business and Information

發表篇名：Approach of Applying Social Collaborative Tagging in Instructional Assessment
for Computer Based Training

榮譽項目：BAI 2010 Best Review Award—Superior Reviewer

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一、摘要：

本次會議計由來自澳洲、加拿大、中國、法國、德國、香港、印度、印尼、伊朗、日本、韓國、馬來西亞、墨西哥、美國及中華民國等 28 個國家，計 471 篇論文分 67 個會場發表。

本人除受邀發表外，並擔任大會資訊管理組的最佳論文審查委員之一。

發表的各場次不論場布、設備及會場服務均極優異，議事組並為與會人員安排當地的校及國際產業製程參訪，會同人員尚包含教育部技職司等長官，參訪者或對訪的學校及產業留下深刻印象。

本人所發表 Approach of Applying Social Collaborative Tagging in Instructional Assessment for Computer Based Training，獲來自雪梨科技大學的 Session Chair Chelliah 博士興趣和關注好評，並互留連絡資料以討論進一步交流。

二、目的

International Conference on Business and Information 辦理多年，在企業資訊化的議題累積許多研究交流的經驗，尤以會議通常將所輯論文中評選出 10% 的最佳文章選錄到 International Journal of Business and Information (IJBI) 或 Contemporary Management Research (CMR) 等知名期刊，對參與者而言如能兼國際會議及國際期刊的業績，確實十分實惠。

國際會議的發表是個人學術上努力的方向，也是我們學校鼓勵教職同仁國際化的標的，爰是試將個人研究部份成果投稿前往發表，另一方面也是藉機參與該會的最佳論文評審工作，可在前往與會時觀摩國際會議舉辦的各項活動運作。

三、過程

本人 2 月份投稿 International Conference on Business and Information 獲邀發表，隨後因應擔任會議之管理資訊組最佳論文的審查工作，故除了論文發表證明外，大會亦給予本人 the BAI2010 Best Review Award，列為 19 名 Superior Reviewers 之一。

行程方面，自 7/4 啟程至日本福岡，住宿博多地區，以搭新幹線方式往返參加 7/5-7/6 議程，計三天的行程。會議地點麗池皇家酒店在北九州的小倉市，因發表場次為 7/5 下午 Session B2 (Emerald)，故除參加有限發表場次，並抽空走訪小倉市城和市區貿易大樓的資訊市集，測試一些 3D 電視和所配製的 3D 節目。

會議議場遠逢教育部技職司的長官和舊識，亦認識香港大學的教授、博士生，以及馬來西亞的資訊公司主管等，交流資訊教育及研究經驗，相談甚歡並互留名片，以備持續連絡。

本次會議計有來自澳洲、加拿大、中國、法國、德國、香港、印度、印尼、伊朗、日本、韓國、馬來西亞、墨西哥、美國及中華民國等 28 個國家稿件逾 700 篇，計通過錄取 471 篇論文，分 67 個會場發表。

本人原登錄錄取的類組為管理資訊組排表於 7 月 7 日發表，但為調整參訪時段而向秘書處連絡協商，經同意調至 7 月 7 日 Session B2 場次，和其他類組的論文一起發表。所發表題目為 Approach of Applying Social Collaborative Tagging in Instructional Assessment for Computer Based Training，為本人在電腦輔助教育訓練領域所做的一個教學實驗，採用網路協同標籤技術來協助教學評量成效檢定，讓教學設計者以不同的思維和具體技術檢測教學設計的各項達成度。發表後會場有五位與會者提詢受測同學反應、技術上會否有同學測驗間掩護及實施成本考量等，討論熱絡。Session Chair 為來自雪梨科技大學的 Chelliah 博士，對本主題表達高度興趣和好評，與會者並為此互留連絡資料以討論進一步交流。

四、心得及建議

- 1.主辦單位安排參訪行程，有提供英譯解說導覽，其實有相當程度為日本這些產業行銷的意圖，據云日本部門有把注本會議，不論如何配合國際會議安排產業參訪，比其名勝景點參觀更有意義。
- 2.日本的食宿開銷頗耗，學校補助機票雖不無小補，但會議所安排的各項參訪行程，均為自費行程，所索費用(含交通車、餐飲及行政開支等)不賒，如全部參與要在議程前後各加兩天食宿開銷，皆屬個人負擔部份，建議學校既然補助機票和註冊費，應加補助會議主辦單位所辦的參訪行程。
3. International Conference on Business and Information 的徵稿範疇過太，雖然增大橋源無可厚非，但應有每年重點主軸，以便有長遠累積的發展軌跡可循，同時可續縮反映當年學術思維的焦點和焦距。
- 4.許多學校已把大學生和碩士生的論文一般發表，提到國際會議發表的等級，會場可見許多國內外教授與一群發表的學生聚集，對將發表者面授機宜，對已發表者檢討建議等，建議本校對國際會議發表的獎補助，應擴及碩士生發表及帶隊指導教授，對本校學術風氣及國際化的能力，當有所提振。

Transportation Information

Rihga Royal Hotel Kokura, Kitakyushu, Japan

2-14-2 Asano, Kokurakita-ku, Kitakyushu, Fukuoka 802-0001, Japan

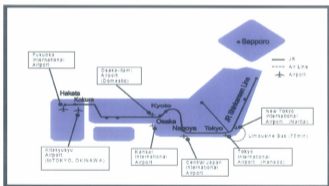
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<http://www.rihga.com/kitakyushu/index.html>

E-Mail: kokura@rihga.co.jp

② Access to Kitakyushu

Access to Kitakyushu is also possible from the neighboring "Fukuoka International Airport" and "Kitakyushu Airport".



International Conference on
Business And Information (BAI 2010)
Summary of Schedule

July 05, 2010

14:20-16:00	Sessions (A1-A5)	Sapphire, Emerald, Diamond, Mats, Ume	4F
16:00-16:20	Tea Break		
16:20-18:00	Sessions (B1-B4)	Sapphire, Emerald, Diamond, Mats	4F

July 06, 2010

08:20-10:00	Sessions (C1-C6)	Sapphire, Emerald, Sakura, Mats, Ume, Diamond	4F
	Session (C7)	Hanamushiki	5F
10:00-10:20	Tea Break		
10:20-12:00	Sessions (D1-D6)	Sapphire, Emerald, Sakura, Mats, Ume, Diamond	4F
	Session (D7)	Hanamushiki	5F
12:00-13:20	Lunch	Royal Hall	4F
	Opening Ceremony		
	Best Papers Award Presentation		
13:20-15:00	Sessions (E1-E6)	Sapphire, Emerald, Sakura, Mats, Ume, Diamond	4F
	Session (E7)	Hanamushiki	5F
15:00-15:20	Tea Break		
15:20-16:30	Sessions (F1-F5)	Sapphire, Emerald, Sakura, Mats, Ume	4F
	Session (F7)	Hanamushiki	5F
15:30-16:30	B&I Executive Committee Meeting	Diamond	4F
16:30-16:50	Tea Break		
16:50-18:00	Sessions (G1-G5)	Sapphire, Emerald, Sakura, Mats, Ume	4F
	Session (G7)	Hanamushiki	5F

July 07, 2010

08:20~10:00	Sessions (H1-H6)	Sapphire, Emerald, Sakura, Mats, Ume, Diamond	4F
10:00~10:20	Tea Break		
10:20~12:00	Sessions (I1-I6)	Sapphire, Emerald, Sakura, Mats, Ume, Diamond	4F
12:00~13:20	Lunch	Royal Hall	4F
13:20~15:00	Sessions (J1-J6)	Sapphire, Emerald, Sakura, Mats, Ume, Diamond	4F
15:00~15:20	Tea Break		
15:20~16:30	Sessions (K1-K6)	Sapphire, Emerald, Sakura, Mats, Ume, Diamond	4F
16:30~16:50	Tea Break		
16:50~18:00	Sessions (L1-L6)	Sapphire, Emerald, Sakura, Mats, Ume, Diamond	4F

Session [B2] 16:20 – 18:00 Emerald (4F)

Other Articles

Session Chair: John Chelliah University of Technology Sydney

A Study on the Role of Guanxi in Entrepreneurship and Unemployment

Yao Tung Chen Ming Chuan University

Ker Tah Hsu National Taichung University

Chun Hsiung Cho TungHai University

Infrastructure and Land Use: A Case Study Using Nang Rong Panel Data

Pungpood Rukunnuaykit National Institute of Development Administration

Introduction of Teaching Excellence-Taiwan Higher Vocational Education, 2006-2008

Yu-Chen Hsiao National Taiwan Normal University

Ming Ying Chen Ministry of Education

Yu Hsi Yuan National Taiwan Normal University

How Gao Phsu National Taiwan Normal University

An Macroeconomic Analysis in Stock Market of the Ten Industrial and Emerging Regions by Utilizing the Portfolio Theory

Ming-Yuan Hsieh MingDao University

Ching-Te Wang National Chun-Yi University of Technology

Chu-Tung Chen National Chun-Yi University of Technology

Hwai-En Tseng National Chun-Yi University of Technology

Chi Tung Chen National Chun-Yi University of Technology

Measuring Consumer Satisfaction Levels in Hong Kong and Its Correlation to Companies' Firm Value

Geoffrey Kwok Fai Tso City University of Hong Kong

Chi Wai Wu City University of Hong Kong

Do Management Consultants Understand the Psyche of Their Clients?

John Chelliah University of Technology, Sydney

Approach of Applying Social Collaborative Tagging in Instructional Assessment for Computer Based Training

Yung-Chou Hsu National Taichung Institute of Technology

Kai-Chiao Chuang National Changhua Senior School of Commerce

Chin-Ming Hong National Taiwan Normal University

APPROACH OF APPLYING SOCIAL COLLABORATIVE
TAGGING IN INSTRUCTIONAL ASSESSMENT FOR
COMPUTER BASED TRAINING

Yung-Chou Hsu
*Department of Multimedia Design, National
Taichung Institute of Technology*
2010, Jul. 5

OUTLINE

- Introduction
- Related works
- Research methods
- Results
- Conclusion

INTRODUCTION

- **Collaborative tagging :**
recruit the activity of web users into effectively organizing and sharing vast amounts of information(Golder & Huberman, 2006)
- **Instructional assessment:**
plays important role in feedback on teaching performance and learning outcomes(Dick & Carey, 1996)



INTRODUCTION(2)



Figure 1. Learners are passive role on instruction assessment.

INTRODUCTION(3)

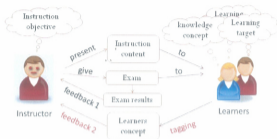


Figure 2. Equal participation of both teaching and learning makes learners play an active role on instructional assessment.

RELATED WORKS(1)

- **Limits of Traditional Instruction Assessment Approach**(Gregg, 2008)
 - Time consuming
 - Data sharing.
 - Temporary.
 - Search and retrieval and
 - Spreadsheet errors
- **Learning Management System with Test Suit**
 - Time consuming
 - Lots of Budget

costumed approach is needed

whether digitalize or not ,
Both the amount of data being collected and
instructors' burden are increases



costumed approach
learners participate on data collection
appropriate analysis methods.

RELATED WORKS(2)

- **Collective Intelligence**
 - controls the knowledge and work of users to provide the data for the application and to improve its usefulness
- **Social Collaborative Tagging**
 - Web users interact with a collaborative tagging system by posting content into the system, and associating tags with that content.

RELATED WORKS(3)

- Similarity Coefficient
 - Dice coefficient
 - Jaccard coefficient function
 - Cosine coefficient

$$(1) \frac{2|X \cap Y|}{|X| + |Y|} \quad \text{Dice's coefficient}$$

$$(2) \frac{|X \cap Y|}{|X \cup Y|} \quad \text{Jaccard's coefficient}$$

$$(3) \frac{|X \cap Y|}{\sqrt{|X| \cdot |Y|}} \quad \text{Cosine coefficient}$$

RESEARCH METHOD

- Six classes with two CBT courses included in experiment (program of concept of computer network)
- Two courses for knowledge dimension fields
 - Conceptual Knowledge
 - Procedural Knowledge
- Three sets of tags for each two courses :
 - Content tags
 - Item tags
 - Collaborative tags
- The difference indicating Methodology
→ Similarity Coefficient

APPROACH DESIGN

Table 1. Knowledge dimension of two course occupied on our work

Course No.	Content Outline	Knowledge Dimension
Course #1	Remember and Interpret the definition, type and methods of data transfer on computer network.	Conceptual Knowledge
Course #2	Calculate the different kind of data transfer rate on computer network.	Procedural Knowledge

APPROACH DESIGN

The Inter-relationship of Three Tags Set



- A: Contents tags from instructor.
- B: Collaborative tags from learners.
- C: Items tags from assessment item.

Figure . Map illustrates the inter-relationship of three tags set

RESEARCH METHOD(3)

- Similarity Coefficient

$$S = \frac{|X \cap Y|}{|X \cup Y|} = \frac{c}{a + b - c}$$

S : similarity coefficient
 a : tag number of X set
 b : tag number of Y set
 c : tag number of intersection of X and Y



A: Contents tags from instructor.
 B: Collaborative tags from learners.
 C: Items tags from assessment item.

APPROACH DESIGN

Visualized Map of Three Tags Sets

Three tags sets with the circle areas on corresponding size.

Description about performance and possible causing factor of each situation is attached on right side column.

Circle Map	Description
	<p>a=0, b=6, c=0 Intersection part of contents tag(C) and collaborative tag(B) is relatively higher, but 70% of its part is B→A, also need instructor's extension.</p> <p>Case #1 : Class #1</p>
	<p>a=0, b=11, c=14 A high collaborative index of collaborative tag and intersection degree.</p> <p>Case #2 : Class #2</p>

RESULTS(1)

Table 2. Relationship among content tags(A), collaborative tags(B) and item tags(C).

Course No.	ClassNo.	Number of Collaborative Tag(B)	A/B	(A/B) %	B/C	(B/C) %	A/B/C
Course#1	1	88	31	35.23%	19	21.71%	18
	2	124	20	16.13%	15	12.10%	14
	3	119	31	26.05%	20	16.81%	19
	4	36	20	55.56%	21	58.33%	12
	5	124	25	20.16%	16	12.67%	15
	6	89	23	25.84%	20	22.47%	15
Course#2	1	72	21	29.17%	12	16.67%	11
	2	82	21	25.61%	12	14.63%	11
	3	118	24	20.34%	12	10.17%	11
	4	82	12	14.63%	14	17.07%	13
	5	124	18	14.52%	10	8.06%	9
	6	71	19	26.76%	12	16.90%	11

RESULTS(2)

Table 3. The similarity coefficient compared with common relations

Class	Course#1			Course#2		
	S_{AB}	Average Score	S_{BC}	S_{AB}	Average Score	S_{BC}
1	0.282*	41.21*	0.208*	0.283*	41.91*	0.181*
2	0.140	82.22*	0.123	0.213*	44.04	0.140
3	0.221*	38.35	0.163	0.209	45.15	0.197
4	0.226*	40.91*	0.126*	0.146*	51.24*	0.211*
5	0.167	82.22*	0.121	0.157	41.91*	0.093
6	0.197	38.35	0.111*	0.213*	46.86*	0.151*
Average	0.213	40.695	0.200	0.204	48.375	0.145

*. greater than the average of values.

CONCLUSION

- Collaborative tags applied in assessment balance the role on instruction assessment on CBT courses
- Our Approach to consistency indicator checking among instruction content, collaborative tagging and learners' performance
- Results in our case shows that conceptual knowledge course has the significantly affect to score

Thanks for your attention

Q&A

附件 3：會議相片



開幕式



會場各項 Awards 獎牌



會場歡迎牌及台灣參加參訪同伴



報到櫃台前留影



發表進行現場



發表場地標牌



發表後與會議主席、香港大學教授及主辦單位代表之一(亦本校同仁)合影