

數位化英語學習系列講座

--數位化英語學習之理論、研究與實務

結案報告

指導單位：



教育部

主辦單位：



國立臺中教育大學
National Taichung University

承辦單位：



National Taichung University
English Department

教育部補助推動人文領域人才培育國際交流計畫
數位化英語學習系列講座--數位化英語學習之理論、研究與實務
結案報告

國立臺中教育大學英語學系

數位化時代的來臨及國際化的潮流下，我國大學英語教育也日益走向線上學習一途。數位化英語學習平台與多功能語言教室的建置已成各大學樹立其開放、先進、全球化形象不可或缺的重要配置。經費與資源的揖注更是不在話下。然而，在數位化英語學習的熱浪中，我們究竟對這個新的萬靈丹有多少理解？它的使用真的符合語言學習原理嗎？如何運用才能獲得預期效果？因此，本系列講座就數位化英語學習之各項相關議題，邀請國內外學者專家做深度的探究及討論。

本系列講座之舉行為配合國立臺中教育大學所主辦之 International TEFL Conference at NTCU，內容包括專題演講、專題座談、研讀會。規劃達成目標為：

1. 建立語言教學者及學生對數位化英語學習資源之正確態度。
2. 加強國內英語教師及學生對數位化語言學習之認識。
3. 促進數位化英語學習資源之有效運用。
4. 增進大學英語教師對整合數位化教學之專業知能。
5. 鼓勵國內從事數位化英語學習之相關研究。
6. 形成數位化英語學習之研究及學習社群。

專題演講及參與專題座談、研讀會主要學者

1. Dept. of Linguistics and Applied Language Studies, Penn State University, Dr. Steve Thorne
2. 清華大學資訊工程科學系張俊盛教授
3. 清華大學外國語文學系劉顯親教授
4. 台灣師範大學英語學系陳浩然教授
5. 台灣大學外國語文學系高照明教授
6. 清華大學外國語文學系張寶玉教授
7. 台中教育大學英語學系廖美玲教授

主要參與學者皆為數位化英語教學領域之享有盛名學者，除有學術著作外，更有實際開發數位化學習平台之經驗，並曾在課室中使用數位化英語教學系統，因此其演講內容將就其主題做深入淺出的說明，並帶領參與講座的學者與師生深入討論。最後集思廣益，為國內數位化英語學習之長久規劃歸納發展方向。

除此之外，由於系列講座的主講者 Dr. Thorne 為數位化學習有相當知名的學者，他的蒞臨也引起我國從事英語數位化教學不同研究社群的期待，盼望能有機會與他或 Penn State University 研究團隊合作，因此也爭取他的訪問。國立政治大學外語學院創新外語教學研究中心及英文系即趁他來國立臺中教育大學英語學系參加系列講座之便，為其所舉辦的 seminar 主講。詳細情形請參考附件一。

系列活動時程

I. 公開演講 11/24 1:30 P.M. ~2:30 P.M

首先由自 Penn State University 受邀來台的學者 Dr. Steven Thorne 到台中教育大學所主辦之 International TEFL Conference at NTCU 演講，闡述數位化英語學習之理論基礎。

Steven Thorne 的簡歷如下：

Steven L. Thorne is Assistant Professor in the department of Applied Linguistics and Associate Director of the Center for Language Acquisition at the Pennsylvania State University. He also serves as the Advisor for Mediated Learning at the Center for Advanced Language Proficiency Education and Research (a national foreign language resource center). His research focuses on cultural historical activity theory, computer-assisted language learning, new media literacies, second language acquisition, and themes contributing to social theory and critical pedagogy. He has presented invited talks, workshops and seminars on a variety of language-related topics, including Internet communication and information technologies, intercultural communication, Vygotskian developmental theory, and corpus linguistics. His research has appeared in numerous edited collections, the *Handbook of New Literacies*, *Encyclopedia of Language and Education*, and the *Modern Language Journal*, *Language Learning & Technology*, *The CALICO Journal*, *Annual Review of Applied Linguistics*, and *Intelligence*, among other venues. His book length works include a co-edited volume on *Internet-mediated Intercultural Foreign Language Education* (Thomson/Heinle, 2006) and the co-authored monograph *Sociocultural Theory and the Genesis of Second Language Development* (Oxford University Press, 2006).

其演講主題及內容摘要如下：

Title: Interculturality and activity in Internet-mediated language education

Abstract:

Within affluent regions of the world and for Internet users everywhere, everyday communication and information practices are markedly different today from those of even a decade ago. There now exist a plethora of established as well as emerging

genres of Internet-mediated communicative activity, many of which vary substantially from pre-digital epistolary conventions (e.g., Crystal, 2001; Thorne & Payne, 2005; Thorne & Black, forthcoming). There is an increasing need for research into the relations between school-based literacies and the often heterogeneous practices of social-personal and recreational participation in the culturally organized settings of online environments (though see Lam & Kramersch, 2003; Lam, 2004, 2005; Thorne, 2003, forthcoming; White, 2007). This presentation addresses two complementary questions: How does prior and ongoing experience in on-line speech communities contribute to how Internet-mediated communication play outs in formal educational contexts? How do emerging language and literacy practices within Internet-mediated environments (e.g., instant messaging, blogging, massively multi-user online gaming) relate to traditional instructional contexts, goals, and literacies? This presentation will report findings from three empirical projects, 1) Internet-mediated intercultural communication in University foreign language education, 2) use of instant messaging and blogging for out-of-class foreign language interaction at the secondary school level, and 3) the transcultural, multilingual environments of multiplayer online games and environments (e.g., World of Warcraft and Second Life). Using activity theory (Engeström, 1999; Thorne, 2005), analysis suggests that each of these contexts involves amalgamated activity systems that explicitly index competencies and performative norms common to other, seemingly exogenous systems. I will specifically argue that in the ecology of multilingual and transcultural environments, communication is an accomplishment that draws upon resources distributed across activity systems. Understanding the specificities of some of these relationships helps to forge more responsive, and more responsible, pedagogies for students living in an increasingly complex world. In conclusion, I will describe a set of “bridging activities” that put into constructive juxtaposition the vernaculars relevant to emerging digital literacies with more conventional genres and formal analytic logics associated with formal schooling.

II. 專題座談 11/24 2:40 P.M.~3:30 P.M.

系列活動第二場由國內數位學習專家就其專長領域發表見解，並與 Steven Thorne 深入對談。國內學者有清華大學外國語文學系劉顯親教授、台灣師範大學英語學系陳浩然副教授、台灣大學外國語文學系高照明助理教授、清華大學外國語文學系張寶玉助理教授。

座談會的主題為：Corpus, theory, and language teaching。子題為：

1. Corpus analysis and CALL task design
2. CANDLE II Project: Games and Language Learning
3. Error Identification in Learner Corpora Using Natural Language Processing Tools

4. SCT in language testing: Dynamic assessment, Mediation, Transcendence, Self-Regulation vs. Accountability

會中學者們就創新數位科技及語料庫及英語教學得議題進行討論熱烈。各位參與討論學者的 PowerPoint 綱要檔請參見附件二。

III. 研讀會 11/25 9:30 P.M. ~12:00 P.M.

研讀會由 Dr. Steven Thorne、張俊盛教授、劉顯親教授、陳浩然副教授、高照明教授、張寶玉助理教授、廖美玲教授於台中教育大學英語學系會議室帶領研讀 *Internet Mediated Intercultural Foreign Language Education* 一書。歡迎有興趣的各界人士參與。以參加 11/24 的公開演講及專題座談者優先。最先報名者前 10 名可獲主辦單位提供 *Internet Mediated Intercultural Foreign Language Education* 一冊。

研讀會網址為 <http://210.240.192.214/tefl/Default.aspx>

讀書會參與名單請見附件三。

數位化英語學習系列講座具體執行成效

本系列講座具體執行成效包括以下各項：

1. 近 200 位英語教學學者及教師聆聽 Steven Thorne 的演講。
2. 國內外著名數位英語學習學者進行精彩對談，將先進的數位科技融入英語教學的各面向，作最清楚而具時效性的掌握。
3. 由 Steven Thorne 帶領、國內著名數位英語學習學者提供精闢見解的研讀會，提供二十多位對數位化英語學習有興趣人士深入瞭解該領域的重要議題，及經驗交流的平台。
4. 跨校資源與資料互享，建立研究社群。
5. 建立與 Penn State University 進行跨國研究合作機會。

我們相信藉由這次系列活動，已塑造了英語數位學習社群的雛型，在深度討論會帶動下，國內英語數位學習將有高效能之發展與運，將持續以網站作為持續推廣之平台。我們希望將來能藉更多這樣的機會激發國內大專校院英語教師及學者對數位化英語教學的興趣，對數位化英語學習抱持更積極的態度。促進國內與國外學者對此新興議題的看法交流，建立國際性的研究社群。

附件一

國立政治大學外語學院創新外語教學研究中心邀請 Dr. Steven Thorne 為其
Seminar 主講資料

**Taking the Road Less Traveled
A Seminar on Sociocultural Theory (SCT)
in Foreign Language Education**

國立政治大學外語學院創新外語教學研究中心及英文系 主辦*

I. SCT and Technology in Foreign Language Education

Time: 9am-12pm, November 26, 2007 (Monday)

**II. SCT and Alternative Research Paradigms in Foreign
Language Education**

Time: 2-5pm, November 26, 2007 (Monday)

III. The Study Group

Time: 12-2pm, October 26, November 2, 9, 16, 23 (Fridays)

Venue: The English Department, National Chengchi University
(地點：政大英文系，山上校區季陶樓 2-3 樓)

Background and Purpose

Around the mid 1990s, there were heated debates in the international academic community of foreign language education, spreading across many major journals, including *Applied Linguistics* (1993), *the Modern Language Journal* (1994), and *TESOL Quarterly* (1997). Researchers following the positivist tradition were challenged by a growing number of critics who started to see the problem of having the field dominated by only one type of ontology and epistemology (i.e., positivism) and by limited ways of explaining the process of language learning (i.e., UG or cognitive science). This group of critics and researchers, including Lantolf (1996), Firth and Wagner (1997), and Larson-Freeman (2002), questioned the power of explanation rendered solely by cognitive science and through experimental studies on the complex phenomena in language learning. Their discussions focused on Sociocultural Theory (SCT), developed by Vygotsky in the 1930s, and they investigated how the emphasis of mediation and interaction on human development could provide alternative explanations for learner data collected from natural contexts.

Instead of depending on quantitative studies, these researchers adopted more qualitative methods in acquiring a deeper understanding of learner agency in the activity of developing language proficiency and learner participation in real-world practices (see Zuengler & Miller, 2006, for more information).

Today, more than 15 years after the debates began, researchers following the SCT paradigm are active in a variety of trends of research in foreign language education. Their communities are growing strong in *second language academic writing* (e.g., Cansanave and Vandrickm, 2003), *teacher professional development* (e.g., Karen Johnson), *technology or CALL* (e.g., Steven Thorne), and many others. Often researchers take SCT as a given, viewing the approach as widely accepted and understood.

While this is the case with the international community, the changing paradigm is not as obvious here in Taiwan, and our foreign language educators/researchers in SCT do not seem to be as active either. One needs only to take any conference proceedings or local language-related journals to see an extremely low number of studies adopting SCT as the analysis framework. The reasons could be that it involves too steep a learning curve to move from positivism to relativism and that the paradigm shift is less acknowledged (or acceptable?) in our local academic community.

On November 26, we are pleased to welcome, Dr. Steven Thorne of Pennsylvania State University, a world-renowned researcher and co-author of the book *Sociocultural Theory and the Genesis of Second Language Development* (2006). Dr. Thorne and local researchers will present their projects and discuss the challenges and opportunities involved in crossing paradigms and promoting alternative views of learning in their respective research endeavors of foreign language education, including technology, teacher education, and L2 academic writing. The purpose is to understand how we may create a more nurturing local environment for alternative research paradigms.

I. The morning session on Nov. 26 will focus on SCT and technology

Main Presenter:

Steven Thorne, Pennsylvania State University

Respondents and Discussants:

- Cheng-fan Chang (張靜芬) and graduate students, National Chia-Tung University
- Yu-Feng Diana Yang (楊郁芬), National Sun Yat-Sen University
- Huei-Chin Vicky Yeh (葉惠菁), National Yunlin University of Science &

Technology

- ❑ Members of the *Research Center for Innovations in Language Learning and Teaching*, NCCU: Michael Cheng (鄭傳傑), Chin-chi Chao (招靜琪)

II. The afternoon session on Nov. 26 will be on SCT and alternative research

Discussants include

- ❑ Steven Thorne, Pennsylvania State University
- ❑ Yi-shuan Gloria Lo (駱藝瑄), National Penghu University
- ❑ Members of the *Research Center for Innovations in Language Learning and Teaching*, NCCU: Daniel Chang (蔣宗益), Chin-chi Chao (招靜琪)

III. The study group

In preparation for Dr. Steven Thorne's SCT seminar on November 26, we are also holding a series of study group activities on Oct. 26, Nov. 2, 9, 16, and 23 (12-2pm, Fridays). The schedule and reading list are listed below.

All PDF files are available at Dr. Steven Thorne's website at
<http://language.la.psu.edu/~thorne/>

1. October 26 (philosophy/epistemology/research): Thorne, S. L. (2005). Epistemology, politics, and ethics in sociocultural theory. *The Modern Language Journal*, 89, 393-409. [PDF](#)

(If you are very new to SCT, this may be a good introduction for you: Lantolf, J. P. & Thorne, S. L. (2007). Sociocultural Theory and Second Language Acquisition. In B. van Patten & J. Williams (eds.), *Explaining Second Language Acquisition*. Cambridge: Cambridge University Press. [PDF](#))
2. November 2: Thorne, S. L., & Black, R. (2008). Language and Literacy Development in Computer-mediated Contexts and Communities. *Annual Review of Applied Linguistics*, 28. (The PDF file provided by Thorne is available when we receive your request email at ccstudy@nccu.edu.tw.)
3. November 9: (emerging technologies):**Thorne, S. L., & Payne, J. S. (2005). Evolutionary trajectories, Internet-mediated expression, and language education. *The CALICO Journal*, 22(3), 371-397. [PDF](#) (**selected by CALICO's Editorial Board as the outstanding article for year 2004-05, Vol. 22)
4. November 16 (telecommunication projects): Thorne, S. L. (2006). Pedagogical and praxiological lessons from Internet-mediated intercultural foreign language education research. In J. A. Belz & S. L. Thorne (eds.), *Internet-Mediated*

Intercultural Foreign Language Education (pp. 2-30). Boston, MA: Heinle & Heinle. [PDF](#) (page proof -- see published article for final version)

5. [November 23](#) (online games): Thorne, S. L. (forthcoming). Transcultural communication in open Internet environments and massively multiplayer online games. In S. Magnan (ed.), *Mediating Discourse Online*. Amsterdam: John Benjamins. [PDF](#)

附件二

參與專題座談討論學者 PowerPoint 綱要

Panel—Corpus, theory, and language teaching

I. Corpus analysis and CALL task design

Hsien-Chin Liou, hcliu@mx.nthu.edu.tw
Department of Foreign Languages and Literature
National Tsing Hua University, Taiwan
2007 TEFL Int'l Conference
National Taichung University, 11/24/2007

Overview

- ▣ Previous works on corpus-related research
- ▣ CANDLE: students of general English, Chinese-English bilingual corpora, learner corpus, NLP, candle.cs.nthu.edu.tw
- ▣ EAP: graduate students in Applied Linguistics and Computer Science disciplines, analyses of journal articles and learner corpus, corpus tool formosa.fl.nthu.edu.tw/moodle

IN-progress: blogging-based peer review and multimodal texts, explore into the SCT (sociocultural theory)

Sources: 2 corpus-related cases

- ▣ Huang, H. T., & Liou, H. C. 2007. Vocabulary learning in an automated graded reading program. *Language Learning & Technology*, 11(3), 64-82. [CANDLE] accessible at llt.msu.edu
- ▣ Hsieh, W. M., & Liou, H. C. 2008 (September). A case study of corpus-informed online academic writing for EFL graduate students. *CALICO Journal*, 26(1), accepted and to appear. [EAP]

Both were derived from corpus projects sponsored by the National e-learning program in Taiwan.

Liou, H. C., Chang, J. S., Chen, H. J., Lin, C. C., Liaw, M. L., Gao, Z. M., Jang, J. S., Yeh, Y. L., Chuang, T. S., & You, G. N. 2006. Corpora processing and computational scaffolding for an innovative web-based English learning environment: The CANDLE project. USA: *CALICO Journal*, 24(1), 77-95.

Liou, H. C., Kuo, C. H., Chang, J. S., Chen, H. H., & Chang, C. F. 2008. Web-based English writing courses for graduate students. In Putnik & Cunha

(Eds.), *Encyclopedia of Networked and Virtual Organizations* (in press).

Hershey, PA (USA): Idea Group Inc.

Textgrader for extensive reading (Huang & Liou, 2007) An MA-TEFL thesis study by H. T. Huang *won a best thesis award in Taiwan*

- An extensive reading environment was developed in order to provide comprehensible input and sufficient encounters with target words.
- By comparing bilingual texts to four word lists based on Taiwanese learners' vocabulary level, comprehensive readings were ensured.
- 16 texts were sequenced according to their vocabulary difficulty level with multiple encounters of target words.
- Measurable word gains were observed based on data of 38 students.
- Learners held positive attitude towards the online extensive reading environment.

On-Line Extensive Reading

EAP: English for academic purposes

- corpus analysis (reference vs. learner) design of online materials
- formative evaluation of the online materials for abstract writing
- analysis of students' writing samples after instruction
- Earlier works were **Hsieh**, W. M. (謝文敏) & Liou, H. C. 2005. Text analyses and online material development for EAP graduate courses. *Selected papers from the 14th Int'l symposium on English Teaching* (pp. 139-150), Vol. 1. Award-winning conference paper 最佳論文. Taipei: Crane. MA thesis in Tsing Hua U. **won a thesis award**

■ 50 journal abstracts and 50 local conference paper abstracts; functional move, collocation, and phraseology, contrastive corpora analyses

■ Problems

- Disproportional abstracts
- Missing of obligatory moves
- Inverted move sequence (purpose move before background move)
- Outlining information in one move

Synchronous online peer review

Academic Concordancer

candle.fl.nthu.edu.tw/care

Formative assessment and analyses of student writing samples

- Formative assessment was based on questionnaire data on 35 target graduate students.

■After the moodle materials were put to use on 10 graduate students, their drafts and revisions were collected for analyses and comparison.

■Revisions show less non-nativeness than drafts.

■The online materials may be helpful.

In progress, Peng & Liou (2008)

■Blogging-based writing project on Vox

■Target at examining how learners collaborate by providing feedback for revisions on peer writing, and construct multimodal texts (Kress, 2003; Nelson, 2006).

www.vox.com

■Form an instructor-teaching assistant-student community

■Write regularly for different contexts or purposes

■5 writing assignments to master academic writing conventions such as organization, unity, and coherence. [Peer response]

■7 journal entries as personal publication space

Multimodal texts encouraged

SCT & CALL

■Lantolf & Thorne. 2006 *Sociocultural theory and the genesis of L2 development*. OUP.

■Ellis & Barkhuizen, 2005. *Analysing learner language*. OUP, ch10.

■Villamil & de Guerrero. 2006. Sociocultural theory: a framework for understanding the socio-cognitive dimensions of peer feedback. In Hyland & Hyland, *Feedback in L2 writing*. CUP, ch2.

■劉顯親 1998. 談維歌思基的認知發展潛能區和英語教學, *第七屆國際英語教學研討會暨書展論文集*(pp. 717-725). 台北文鶴。[On ZPD]

■劉顯親 1999. 第四章:如何應用電腦來輔助社會式的英語教學, *嶄新而實用的英語教學: 國中國小英語教學指引*(陳秋蘭, 廖美玲編輯, pp. 77-96) 台北: 敦煌書局。[SCT-oriented CALL]

Villamil & de Guerrero, 2006 SCT-based peer review study in a face-to-face situation

■Patterns of interaction and regulation during peer revision: object-, other-, to self-regulation

■Mediated assistance during interaction (scaffolded interaction, Ellis, 2005)

- Development and internalization of revision behaviors
 - Good discussion of feedback in peer revision in Lantolf & Thorne (2006)
- Outcome from SCT? [online peer review in a blog environment]
- Near peer role models for writers
 - Identity shifts for reviewers
 - Demonstrated progress in L2
 - Construction of ZPD
 - Sense of progress for reviewers
 - Improved grammar (?) for writers
 - Student solidarity
- (Engestrom, 1987, 1993, cited in Lantolf & Thorne, 2006, p. 259)

II. Games and Language Learning

Howard Chen

Department of English

National Taiwan Normal University

The Outline of This Report

- This talk we will present the following topics

- 1. The online games for language learning
- 2. Chatbot and Animated Characters for learning
- 3. Online 3D- Second Life and its potentials

Vocabulary learning can be very boring for Students

- Vocabulary learning can be very boring for Students
- Online learning game will motivate learners to memorize some words.
- Screenshots of Online vocabulary games.

Vocabulary Games

- Multiple users can log in the same time, the system can pair them up.
- They can listen to the audio and type in the word they heard.
- The system will then check if they spell the word correctly.
- The person who can respond more quickly and accurately will win the game and gain points.

Spelling Bee Online

Your Opponent Wins

Time to Review These Words

Collocations Matching

II. How about Online Chatbots and Animated Characters?

- The importance of social interactions
- BUT the students often log in chatrooms at different time.
- The Chatbot can be quite interesting
- And it is highly interactive
- Where are the good Chatbots?

Review of Chatbots (text-based)

■ In 1990 Hugh Loebner agreed with The Cambridge Center for Behavioral Studies to underwrite a contest designed to implement the Turing Test. Dr. Loebner pledged a Grand Prize of \$100,000 and a Gold Medal for the first computer whose responses were indistinguishable from a human's. Such a computer can be said "to think." Each year an annual prize of \$2000 and a bronze medal is awarded to the **most** human-like computer.

Talking bots: AIML and TTS

<http://140.122.73.150:8080/candle/candle1.html>

- CANDLE Project FAQ

Plans for Bots and Animated Characters

- 1. AIML can be added in and make the bots smarter.
- 2. Different ways of acquiring knowledge- the tool called converter.
- 3. Develop domain specific tutor or experts.
- Like grammar tutor
- 4. The TTS can help listening

Animated Characters- demo conversations

- The potential of using talking heads and chat bots.

Games and The 3D Virtual Worlds

- Talking about the LLT. Sims 虛擬人生- about using the German version of Sims to learn German.
- A new trend is that many universities and colleges moved their classrooms and campus to the virtual world.
- The new world- Second life 第二人生.

Sims Teach German

http://www.archive.org/details/the_sims_teach_german

Second Life

- Show them some video files there.
- Quite a few

- Downloadable from Youtube
- Several books and web sites for tutorials

■http://www.associatedcontent.com/article/215721/top_10_second_life_tutorial_videos.html

Texas State in Second Life

Texas State University

Meeting People on Second Life

Interactions with Other People

Virtual Classrooms

The Potentials of Second Life

- 1. Use the existing resources
 - English village; language lab
- 2. Build new learning environment for specific learning needs _ How challenging is this?
- 3. Build and design with a team.
- How many teachers and developers should be involved?

The Potentials of Learning/Education Games

- Traditionally, we think games are useless and irrelevant for learning
- Playing games = wasting precious time.
- Perhaps the new generation might not believe that.
- How we can make the Learning Process more Interesting and engaging

III. Error Identification in Learner Corpora Using Natural Language Processing Tools

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Research Questions

1. How can we identify grammatical and lexical errors in learner corpora by using natural language processing tools and techniques ?
2. How well can these tools perform?

English Learner Corpora we Use

- 1. Chinese Learner English Corpus (CLEC) by Gui and Yang (2003)
- (中國學習者英語語料庫 桂詩春,楊惠中編著 上海：上海外語教育, 2003)

●CLEC contains error tagging which can facilitate the evaluation of error identification.

●We only use the subcorpus ST2, which contains 1703 sentences.

●2. NTU learner corpus.

Format of Error Tagging in CLEC

●People should have fewer [wd3,1-] food which contains a lot of fat, sugar, western diets are always quite unhealthy, we should eat [wd7,1-]less. The foods [sn9,1-] which contain some fat, some fibre, a little salt and so on is a healthy diet [vp3,s-].

Natural Language Processing Tools for Error Identification

●1. bigrams

●2. spelling checkers

●3. parsers

The Spelling Checker we Use

●<http://search.cpan.org/~cwest/ppt-0.14/bin/spell>

The most common 20 errors found by the spelling checker in the NTU corpus

●Informations(43)ture(42)imformation(36)visite(20)knowledges(14)alway(12)convinent(12)imformations(11)musics(10)websit(10)lifes(9)morden(9)serch(9)visted(9)convient(7)fantacy(7)convience(6)creat(6)everythings(6)informaitons(6)

Different Types of Errors Found by the Spelling Checker

●1. spelling errors: serch,

●2. grammatical errors: informations, knowledges

●morphophonological errors: lifes,

●3. pronunciation errors: ture, convinent, convient, imformation, visite, websit, creat

What are bigrams?

●Bigrams are two consecutive words.

●e.g.

Bigrams are

are two

two consecutive

words .

Why are bigrams potentially useful?

●By deriving frequency counts of bigrams from a large authentic corpus, we

might be able to identify erroneous word combinations in a learner corpus.

- Assumption: A bigram not found in a large authentic corpus is dubious.

The corpus from which we derive bigrams

- The Associated Press World English Corpus contain 107933 K words (more than one billion words)

- Due to memory limitations, we only use 1/5 of the corpus and derive about twenty million bigrams

- We remove bigrams that occur only once due to memory limitation of our server.

Why is a parser potentially useful??

- A parser can analyze the syntactic structure of a sentence.

- If a parser is robust, we can identify grammatical errors if the parser encounters a parsing error.

The Parser we use

- Link Parser from CMU
- <http://www.link.cs.cmu.edu/link/>

Output of the Link Parser

Result of our experiment

The Performance of the Spelling Checker

- Accuracy of the spelling checker: 89.72%

Summary of the Experiments

Further Details of Accuracy Rate

Future Study

- 1. Incorporate the grammar checker in the Microsoft Word.
- 2. Expand the corpus size to 400 million words and build a balanced corpus.
- 3. Use class-based bigrams.
- 5. Incorporate dependency relations.
- 5. Apply machine learning algorithms.
- 6. Locate errors and identify error types.
- 7. Empirical study on the instructional design of a computer-assisted grammar checker.

IV. SCT in language testing: Dynamic assessment, Mediation, Transcendence, Self-Regulation vs. Accountability

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November 24, 2007

Contrasts between psychometric and sociocultural perspectives

□ Psychometric characterizations of learning

- Observe changes in individuals' performances over time
- Growth is typically defined as a vertical hierarchy of increasingly generalized and abstract knowledge and skills.
- Criticized for viewing learning only as something that takes place "insider the learners' head"

□ Sociocultural perspective on learning

- Learning is perceived through changing relationships among the learner, the other human participants, and the tool (material & symbolic) available in a given context.
- Thus, learning involves not only acquiring new knowledge, but taking on a new identity and social position within a particular discourse or community of practice.

SCT Challenges to the psychometric conceptions of assessment

□ Psychometric

- Assessment can and should be considered as a discrete aspect of the context in which it is used (the context of learning and teaching).
- Assessment is a distinct phase in the teaching and learning process.

□ SCT

- Assessment in relation to instruction is not a separate or even complementary undertaking, but rather a single activity that seeks to understand (i.e., assess) abilities by promoting their development (Poehner, 2007, p.324 → "Dynamic Assessment").

Dynamic Assessment (DA) (Poehner, 2007, p.324)

□ "Assessment" in the dynamic sense involves transformation of those abilities through dialogic collaboration between learners and assessor-teachers, or "mediators."

□ According to SCT, individual's responsiveness to support, or mediation, that is sensitive to their current level of ability reveals cognitive functions that have not yet fully developed.

□ Appropriate mediation enables individuals to exceed their independent performance, and this in turn stimulates further development (Vygotsky, 1986, 1998).

□ Thus, DA targets what individuals are able to do in cooperation with others rather than what they can do alone (Sternberg & Grigorenko, 2002).

Dynamic Assessment (DA) (2) (Poehner, 2007, p.324)

- DA is an ongoing, development-oriented process of collaborative engagement that reveals the underlying causes of learners' performance problems and helps learners overcome those problems.
- Every mediator-learner interaction encompasses both instructional activities and assessment activities.
- DA sessions vary according to learner development so that over time learners engage in increasingly complex tasks with less mediation.
- During all sessions, learners are encouraged to take on as much responsibility for task completion as possible, and the mediator remains ready to assist them when they stumble (but not revealing the correct answer).

Transcendence (TR)

- A key concept in DA is "Transcendence (TR)" which refers to "individuals' ability to recontextualize their learning and apply it to new, more demanding problems" (Poehner, 2007, p.325).
- Learners who would have received similar scores in a nondynamic procedure actually varied in their ability level and that it was only by observing their response to mediation that these differences emerged.
- After learners have become proficient at completing the tasks used during intervention, they can be further differentiated according to how well they are able to sustain their performance when variations are introduced and tasks become more complex (Poehner, 2007, p.327) → transcend their abilities beyond a given DA session.

Self-regulation / Self-mediation (Poehner, 2007, p.326)

- According to SCT, individuals are always mediated by cultural artifacts, social practices, and activities.
- They are mediated even when they are working alone, in which case their cognitive functioning is mediated by their history of interactions in the world (Vygotsky, 1986). ... Those abilities originally residing in an individual's social interactions become internalized and remerge as new cognitive functions.
- The individual no longer relies on the external environment for mediation but is able to self-mediate, or self-regulate.
- Observing a person's independent performance reveals those functions that have been fully internalized.
- In contrast, the level of performance that an individual cannot reach

independently, but only through external forms of mediation, indicates those abilities that are still forming – the next or proximal level of development.

□ Achievement, Attainment vis-à-vis Progress Test

Comparisons of DA with NDA

□ Function of assessment

- According to Vygotsky, traditional education simply documents whether learner performance is problematic.
- Conventional assessment procedures are “empty” medical diagnosis in which a doctor merely restates in scientific terms what is already apparent to the patient (Vygotsky, 1998, p. 205, as cited in Poehner, 2007, p.333).

□ Function of assessment

- DA follows Vygotsky’s reasoning that the principal responsibility of education is to discover the underlying causes for that performance in order to help learners set new developmental trajectories.
- It replaces “empty” medical diagnosis with a “true diagnosis” that includes “an explanation, prediction, and scientific basis for practical prescription” (p.205).

Comparisons of DA with NDA

□ **Relationship between assessors and learners**

- Assessors are permitted only to observe learners’ behaviors rather than support their striving toward autonomy, in which case the assessor’s presence not only fails to provide a collaborative posturing but may even have a debilitating effect on the learner.

□ **Relationship between assessors and learners**

- DA encourages mediator learner cooperation and the use of artifacts when learners are unable to self-regulate.
- In formal education, DA fully integrates assessment with instructional activities.
- Generalizing assessment performance to classroom activities becomes a nonissue because instruction is part of assessment just as assessment is ongoing during instruction.

Comparisons of DA with NDA

□ Tracking development

- Taking a break from teaching to administer a test (progress test / formative assessment)

□ **Transcendence = tracking development**

- Involves careful attention to changes regarding the types of problems learners

encounter, the mediation they require to overcome these problems, their responsiveness to mediation, and their efforts to gain greater autonomy.

■ Analysis of mediator-learner interactions during transcendence

Comparisons of DA with NDA

□ Nature of ability

■ Rely on strict procedures, such as statistical modeling, for interpreting assessment performances, that are predicated on the assumption that abilities are not changing during the assessment.

■ In this way, assessors are able to use numbers (e.g., scores, percentages, and percentile rankings) to describe the amount of ability an individual possesses.

□ Nature of ability

■ In DA one continually alters both tasks and mediation in order to work successfully within a learner's ZPD because individuals' abilities and corresponding developmental needs are always emergent.

■ Does DA talk about "pass" / "fail", or is that concept non-relevant?

Comparisons of DA with NDA

□ **Ecological generalizability**

■ Generalizations from one context to another

■ Context is a backdrop to performance.

■ To enhance the comparability of scores, we attempt to control the influence of context through standardization so that each individual experiences essentially the same test and contexts of administration. Context is treated as separable from inferences about the individual (Moss, 2003).

□ **The role of context**

■ In order to interpret and/or evaluate a student's performance, T needs to understand the influence of the contexts in which it was produced and to understand the factors that shape that performance (Moss, 2003).

■ DA understands performance to emerge from the interplay among individuals, the activities in which they engage, and the culturally constructed artifacts they employ.

Comparisons of DA with NDA

□ **Temporal generalizability**

■ Predictive validity

■ Examinees' present performance is taken to be a strong indicator of their future performance.

■ The future is assumed to be a smooth continuation of the present.

- The relationship between the present and the future is not so easily defined because the goal of DA is to make visible the cognitive processes underlying a learner's performance, which is achieved through mediated interaction.
- Temporal generalizability makes little sense in DA because change rather than stability is a defining feature of this approach.
- If a learner's performance remained constant over time, this might suggest a lack of development, in which case the mediator would need to reevaluate carefully the approach to interacting with the learner in order to provide support that lies within the learners' ZPD.

Forms of Mediation?

- Hints, leading questions, and demonstrations (Poehner, 2007, p.326)
- In Poehner's (2007) examples of a mediator helping advanced learners of French to narrate stories using different tenses and aspects, the mediator:
 - suggested lexical alternatives
 - asking SS to verbalize why they selected one grammatical form over the other
 - intervening when SS creates errors to determine SS level of awareness of their (wrong) choices
- → Appropriate strategies of intervention
 - How do we define "appropriate"?
 - How can a teacher / tutor become a "mediator"?

Questions

- Poehner (2007: 336) states that DA differs from task-based approaches in that the purposes of the assessment is to support learner development and this purpose goes beyond improved performance on any particular task.
- For this reason, transcendence involves altering tasks to make them more challenging, rather than designing them to mirror those tasks learners have already encountered.
 - How do we deal with the concept of "authenticity" or "washback" in this framework? How authentic is telling a story with a mediator's help?
 - Where does "curriculum" fit in the DA framework?
 - Application of DA beyond classroom assessment contexts, especially large-scale standardized tests.

Questions

- DA's goal of promoting learner development is rooted in the idea that development itself does not have an endpoint (such as earning a high score on a test) but is instead about moving beyond one's current level of ability, whatever

it might be.

- But would this be like an “i+1” in Krashen’s theory?
- How exactly can DA be done in formal education?
- How do you know when a learner “internalize” during TR if she never uses the same form again?
- How can we know if the SS can do it again, alone?
- Treating DA → TR as a form of treatment, do we need studies that prove “delayed post-test effects” of DA?

SCT vs. Real-world need to make decisions (e.g., selection, certification, graduation)

- In life, do we ever work in isolation? Ultimately, how can any judgment be made about individuals?
- Poehner (2007, p. 338): Comparisons among individuals cease to make sense and the dynamics of learners’ cooperative activity becomes more relevant.

Finally

- DA clearly posits a new educational ideology oriented toward learner development, and as such it adopts an inherently **optimistic** view of human beings and their development.

□ SCT in language testing:

Dynamic assessment, Mediation, Transcendence, Self-Regulation vs. Accountability

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- Something to look for in the future:
 - Summers, R. : in progress, *Computer Mediated Dynamic Assessment: Toward an Online Model of Dialogic Engagement*, Unpublished doctoral dissertation, University of South Florida.

附件三 讀書會參與名單

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