

Using Constructivism and Scaffolding Theories to Explore Learning Style and Effect in Blog System Environment

張伊婷、晁瑞明

E-mail: 9510662@mail.dyu.edu.tw

ABSTRACT

The motivation of going online, learning satisfaction and learning effect of Web-based learning environment are all factors closely linked to teaching platform and user interface. Users' learning willingness and learning effect are even more related to web-based teaching design. Therefore, without any doubt, using an effective teaching strategy combined with web-based learning environment to enhance learners' learning effect is very important. However, today's web-based learning environment is in fact expensive, hard to operate and mainly support one-way flow. The current web-based learning environment is not useful for activities such as receive real time messages and show each individual's value; and even harder to achieve group learning. This study was based on the theory of Constructivism and Scaffolding to implement a Blog system environment which allows users to create their own personalized Blog for individual, group, and organization practice. The Blog system is a platform for members to exchange their ideas and thoughts in order to achieve the goal of knowledge sharing and then enhance learning effect of the students. This study utilized the quasi-experiment method and survey research to aim at the target sample of the e-learning related curriculum provided by the department of Information Systems. A fourteen-week experiment was conducted to explore for whether the interaction of teaching strategy and learning style based on the Constructivism and Scaffolding would enhance student learning effect. The results of two-way MANCOVA analysis revealed: 1) the learner's learning style has no significant influence on their learning effect, 2) teaching strategy based on the Constructivism and Scaffolding can improve learner's learning effect, and 3) under the interaction of teaching strategy and learning style, the experimental group shows better learning effect.

Keywords : Web Learning Environment ; Blog ; Teaching Theory ; Learning Effect

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REFERENCES

- 于富雲(2003)。教學方法與學習偏好對電腦輔助自然科學學習成效之影響。教育研究集刊, 49(4), 251-273。王秋華(2001)。網路教學之學生學習行為與學習滿意度及學習績效的關係。大葉大學資訊管理研究所碩士論文, 未出版, 彰化市。王宗斌(1999)。訓練方式、電腦自我效能及學習型態對學習績效的影響-網頁設計時地研究。中央大學資訊管理研究所碩士論文, 未出版, 桃園市。王碧娟(1999)。消費動機、服務品質與購後行為關係之研究—以大學推廣教育為例。中正大學企業管理研究所碩士論文, 未出版, 嘉義縣。王裕方(1998)。電腦態度與學習績效的影響因素探討 中學生網頁製作教學的實地實驗研究。國立中央大學資訊管理研究所, 未出版, 桃園市。方興東、劉雙桂(2004)。博客 (blog) 技術在教育領域的應用研究。網路社會學通訊期刊, 第36期。2005年3月5日, 取自 <http://mail.nhu.edu.tw/~society/e-j/36/36-14.htm> 何雍慶、蘇雲華(1995)。服務行銷領域顧客滿意模式及服務品質模式之比較研究。輔仁管理評論, 2(2), 37-64。李隆盛(1996)。科技與職業教育的課題。台北市:師大書苑。李青蓉、魏丕信、施郁芬、邱昭彰(1998)。人機介面設計。臺北:空中大學出版社。李美慧(2001)。科技接受模式在非同步網路學習系統使用意向之應用。國立中正大學資訊管理研究所碩士論文, 未出版, 嘉義縣。巫靜宜(2000)。比較網路教學與傳統教學對學習效果之研究 以Word 2000之教學為例。淡江大學資訊管理學系研究所, 未出版, 臺北縣。岳修平(1999)。網路教學於學校教育之應用。課程與教學季刊, 4, 61-76。邱貴發(1993)。電腦輔助教學成效探討。視聽教育雙月刊, 33(5), 11-18。林克襄(2004)。妳不能不知道的部落格。2005年6月20日, 取自 <http://jedi.org/blog/archives/003856.html#entry> 林寶山(1995)。教學論 理論與方法。台北市:五南。林克襄(2003)。BLOG 架站實務:使用Movable Type。台北市:旗標出版股份有限公司。周斯畏(1999)。網路科技對教育的影響 - 學習環境、學習型式、師生互動、教學內容的探討。中華管理評論, 2(3), 89-96。洪新原、李易璉(2004)。線上學習應用於醫師在職教育之實證研究:以國兩內醫學中心為例。電子商務研究, 2(4), 465。洪明洲(1999)。網路教學課程設計對學習成效的影響研究。2005年11月12日, 取自 <http://mgt.ba.ntu.edu.tw/management/download/網路教學課程設計對學習成效的影響研究.doc>。洪波(2005)。本Blog的TrackBack地址。2005年11月13日, 取自 <http://www.donews.net/keso/archive/2005/01/11/236003.aspx> 施賀建(2003)。學習風格與方式對學習成效之影響 以互動式與否為基礎。中原大學資訊管理學系碩士論文, 未出版, 桃園市。晁瑞明、張伊婷(2005)。WiKi-Base組織學習型態之協同創作互動模式研究, 2005工研院創新與科技管理研討會, 145-152, 工業技術研究院, 新竹。孫春在(1995)。超媒體網路與遠距合作式電腦輔助學習。教學科技與媒體, 21, 29-37 孫培真(2000)。影響非同步網路學習系統接受度與滿意度之因素:一個以結構化理論為基礎之研究。國立中山大學資訊管理學系博士論文, 未出版, 高雄市。孫厚釗、任訓平(2004)。多媒體網路教學的結構體系及未來發展趨勢。2005年11月18日, 取自 <http://jyjs.jygy.net.cn/Article/ShowArticle.asp?ArticleID=243#> 高廣孚(1995)。教學原理。台北:五南。許正妹(2005)。如何看網路大學教學平台之設計 建構式的觀點。國立雲林科技大學設計論壇, 003, 2005年11月20日, 取自 http://72.14.203.104/003/pdf/003_002.pdf 梁佳玲(2002)。影響網路學習成效之因素研究。國立屏東科技大學資訊管理研究所碩士論文, 未出版, 屏東市。郭重吉(1988)。從認知觀點探討自然科學的學習。教育學院學報, 13, 335-363。郭玉婷(2001)。泰雅族青少年學習型態之質的研究。國立台灣教育學系碩士學位論文, 未出版, 台北市。張春興(1996)。教育心理學—三化取向的理論與實踐。台北市:東華書局。張靜譽(1996)。傳統教學有何不妥? 建構與教學。2005年11月19日, 取自 <http://www.bio.ncue.edu.tw/c&t/issue1-8/v4-1.htm> 張世忠(1997)。建構主義與科學教學。科學教育月刊, 202, 17-25。張世忠(2000)。建構教學 理論與應用。台北市:五南。張世忠(2002)。九年一貫課程與教學。台北市:五南。張苑珍(1997)。鷹架理論在成人教學實務的應用。成人教育, 40, 43-52。陳盈慈(2005)。工業設計系學生學習風格之研究。國立雲林科技大學工業設計系碩士論文, 未出版, 雲林縣。陳育民(2003)。學習風格與學習模式對中學生電子化學習成效之影響。國立中正大學資訊管理研究所碩士論文, 未出版, 嘉義縣。陳年興、林甘敏(2001)。網路學習之學習行為與學習成效分析。資訊管理學報, 8(2), 121-133。陳冠州(1994)。建構式教學法在國小數學科之探討。教師之友, 35(5), 37-44。黃玉枝(1991)。國中資優學生與普通學生學習風格及學校適應之比較研究。國立台灣師範大學特殊教育研究所碩士論文, 未出版, 台北市。蔡崇元(2001)。網路教學者教學互動策略之研究 以大學推廣教育教師為例。國立臺灣師範大學社會教育研究所碩士論文, 未出版, 台北市。廖奕豪(2003)。遠距教學與傳統教學學生學習成效差異之研究。國立中央大學資訊管理研究所碩士論文, 未出版, 桃園縣。鄭明章(1999)。國立空中大學嘉義地區學生學習方式、學習參與程度與學習成效之研究。國立中正大學成人及繼續教育研究所碩士論文, 未出版, 嘉義縣。劉一賜(2004)。縱橫網路企業網誌創造話題行銷。2005年11月28日, 取自 <http://marketing.chinatimes.com/ItemDetailPage/ProfessionalColumnist/ProfessionalColumnistContentByAuthor.asp?MMContentNoID=1238> 5 Armstrong, T. (2001) Multiple intelligences in the classroom, 2nd. edition. Alexandria, Veterans Administration: ASCD. Aliavi, M., & Leidner, D. E. (2001). Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. MIS

Quarterly, 25(1), 117-136. Allinson, C. W., & Hayes, J. (1988). The learning styles questionnaire: An alternative to Kolb's inventory. *Journal of Management Studies*, 25(3), 269-281. Amoroso, D. L., & Cheney, P. H. (1991). Testing a Causal Model of End-User Application Effectiveness. *Journal of Management Information Systems*, 8(1), 63-89. Bannan-Ritland, B. (2002). Computer-mediated communication, eLearning, and interactivity. *Quarterly Review of Distance Education*, 3(2), 161-179. Barua, A., Chellapa, R., & Whinston, A. B. (1995). Collaboratory in Cyberspace: Theoretical Foundation and an Implementation. *Journal of Organizational Computing*, 5, 417-442. Bergeron, F., Rivard, S., & Serre, L. D. (1990). Investigating the support Role of the Information Center. *MIS Quarterly*, 14, 247-260. Bodner, G.M. (1986). Constructivism: A theory of knowledge. *Journal of Chemical education*, 63(10), 873-878. Bostrom, R.P., Oliman L., & Sein M. K. (1990). The Importance of Learning Style in End-User Training. *MIS Quarterly*, 14(1), 101-173. Bozionelos, N. (1996). Cognitive spontaneity and learning style. *Perceptual and Motor Skills*, 83, 43-48. Brownstein, E., & Klein R. (2006). Blogs Applications in Science Education. *Journal of college Science Teaching*, 35(6), 18-22. Carrier, C., & Jonassen, D. H. (1988). Adapting courseware to accommodate individual differences. In D. Jonassen (Ed.), *Instructional designs for microcomputer courseware*. Mahwah, NJ: Lawrence Erlbaum Associates Charles, C. M. (1980). *Individualizing instruction* (2nd ed.). StLouis, Mo.: C.V. Mosby Chou, H. W. (2001). Influences of cognitive style and training method on training effectiveness. *Computer & Education*, 37, 11-25. Chuang, S. C., & Tsai, C. C. (2005). Preferences toward the constructivist Internet-based learning environments among high school students in Taiwan. *Computers in Human Behavior*, 21, 255-272. Clarina, R. B., & Smith, L. (1988). Learning style shifts in computer-assisted instructional settings. (ERIC Document Reproduction Service No. ED295796). Clasen, R. E., & Bowman, W. E. (1974). Toward a student-centered learning focus inventory for junior high and middle school teacher. *Journal of Educational Research*, 68(1), 9-11. Claxton, C. S., & Murrell, P. H. (1987). Learning styles: Implications for improving educational practice. ASHE-ERIC Higher Education Report, 4, Washington DC: George Washington University. Cronbach, L. J., & Snow R.E. (1997). *Aptitude and Instructional Methods: A Handbook for Research On Interaction*, New York: Irvington. Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(2), 297-334. Davis, D.L., & Davis D.F. (1990). The Effect of Training Techniques and Personal Characteristics on Training End Users of Information Systems. *Journal of Management Information System*, 7(2), 93-110. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13, 319-340. DeLone, W. H., & McLean, E. R. (1992). Information Systems Success: The Quest for the Dependent Variable. *Information Systems Research*, 3(1), 60-95. DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: A Ten-Year Update. *Journal of management information Systems*, 19(4), 9-30. DeLone, W. H., & McLean, E. R. (2004). Measuring e-Commerce Success: Applying the DeLone & McLean Information Systems Success Model. *International Journal of Electronic Commerce*, 9(1), 31 – 47. Devellis, R.F. (1991). *Scale Development Theory and Applications*. New York: SAGE. Doran, M. S., & Klein, J. D. (1996). The effects of learning structures on student achievement and attitude using a computer simulation. National Convention of the Association of Educational Communications and Technology, Indianapolis, IN. (ERIC Document Reproduction Service No. ED 397 788) Du, H. S., & Wagner, C. (2005). Learning with Weblogs: An Empirical Investigation. Proceedings of the 38th Hawaii International Conference of System Sciences. (pp. 1-9). HK : University of Hong Kong. Dunn, R., & Dunn, K. (1979). Learning Styles/Teaching Styles: Should They Can They be Matched? *Educational Leadership*, 36, 238-244. Ferdig, R. E., & Trammell, K. D. (2004). Content Delivery in the ' Blogosphere '. Retrieved December 6, 2005, From <http://www.thejournal.com/magazine/vault/articleprintversion.cfm?aid=4677> Felder, R. M., & Brent R.. (1996). Navigation the bumpy road to student-centered instruction. *College Teaching*, 44(2), 43-47. Fischer, B., & Fischer, L. (1979). Style in teaching and learning. *Education Leadership*, 37, 245-254. Fraser, B. J. (1998). Classroom environment instruments: development, validity and applications. *Learning Environments Research*, 1, 7-34. Freitag, E. T., & Sullivan, H. J. (1995). Matching learner preference to amount of instruction: An alternative form of learner control. *Educational Technology Research & Development*, 43(2), 5-14. Goodhue, D. L., & Thompson, R. L. (1995). Task-Technology Fit and Individual Performance. *MIS Quarterly*, 19, 213-236. Graziadei, W. D. (1996). VICE in REST , In T.M. Harrison & T. Stephen (Eds.), *Computer networking and scholarly communication in the twenty first-century university*, New York: State University of New York Press, 257-276. Harrison, A.W., & Rainer R.K. (1992). The Influence of Individual Differences on Skill In End-Use Computing. *Journal of Management Information System*, 9(1) , 93-111. Hiltz, S. R. (1994). *The Virtual Classroom: Learning Without Limits via Computer Networks*. Norwood NJ: Ablex Publishing Corp. Hiltz, S. R. (1997). Impacts of College-level courses via Asynchronous Learning Networks: Some Preliminary Results. *Asynchronous Learn Networks*, 1(1) , 1-19. Hiltz, S. R. (1986). *The Virtual Classroom: Using Computer-Mediated Communication For University Teaching*. *Journal of Communication*, 36(6), 95-104. Jonassen, D. H. (1999). Designing constructivist learning environment. In C. M. Reigeluth (Ed.), *Instructional design theories and models: A new paradigm of instructional theory*. Mahwah, NJ: Lawrence Erlbaum Associates. 215-239 Justyna, R., & Gregory, R. M. (2001). A Framework for Effective User Interface Design for Web-Based Electronic Commerce Applications. *Proceedings of Information Science*, 462-470. Kathy E. Gill. (2004). How can we measure the influence of the Blogosphere?. Retrieved December 3, 2005, From http://faculty.washington.edu/kegill/pub/ww2004_keg_ppt.pdf Kemp, W., & Schwaller, A. (1988). Introduction to instructional strategies. In W. Kemp & A. Schwaller(Eds), *Instructional strategies for technology education*, Mission Hills, CA: Glencoe, 16-34. Kearsley, G. (1999). Criterion referenced instruction. In *Explorations in learning and instruction: The Theory into practice database*. Retrieved December 3, 2005, From <http://www.gwu.edu/~tip/index.html> Kettanurak, V., Ramamurthy, K., & Haseman, W. D. (2001). User attitude as a mediator of learning performance improvement in an interactive multimedia environment: an empirical investigation of the degree of interactivity and learning styles. *International Journal of Human-Computer Studies*, 54, 541-583. King, F., Nelson, J. G., & Restauri, S. (2002). Reaching the Distant Learner: The Evolutionary Process, *Education*, 122, 667-370. Kolb, D. (1984). *Experiential*

Learning: Experience as the source of learning and development. New York : Prentice Hall. Kolb, D. A. (1976) . Learning style inventory, Technical manual. New York : McBer and Company. Lam, Y. L. J., & Wong, A. (1974). Attendance regularity of adult learners : An examination of content and structural factors. *Adult Education*, 14(2), 130-142. Lawrence, G. (1984). A synthesis of learning style research involving the MBTI. *Journal of Psychological Type*, 8, 2-15. Lee, M. G. (2001). Profiling students' adaptation styles in Web-based learning. *Computers & Education*, 36, 121-132. McDermott, P. A., & Beitman, B. S. (1984). Standardization of A Scale for The Study of Children ' s Learning Styles: Structure, Stability, and Criterion Validity. *Psychology in the Schools*, 21, 5-14. McKinney, V., Yoon K., & Zahedi, F. (2002). The Measurement of Web-Customer Satisfaction: An Expectation and Disconfirmation Approach. *Information Systems Research*, 13(3), 296-315. McIsaac, M. S., & Gunawardena, C. N. (1996). Factors influencing interaction in an online course. *The American Journal of Distance Education*, 13(3), 22-36. Mitchell, D. (2003). Thoughts about blogs in education. Retrieved December 20, 2005, From [http://www.technology.org/stories//storyReader\\$150](http://www.technology.org/stories//storyReader$150). Mergel, B. (1998). Learning Theories of Instructional Design. Retrieved December 6, 2005, From <http://www.usask.ca/education/coursework/802papers/mergel/Brenda.htm> Meyer, C. A. (1992) . What's the difference between authentic and performance assessment? *Educational Leadership*, 49(8), 39-41. Moore, M. G. (1989). Three types of interaction, *The American journal of Distance Education*, 3(2), 1-6. Motiwalla, L., & Tello, S. (2000). Distance learning on the internet: An exploratory study. *The Internet and Higher Education*, 2(4), 253-264. Moran, T. P. (1981). An applied psychology of the user. *Computing Surveys*, 13(1), 1-11. Nunally, J. C. (1978). *Psychometric Theory*, 2nd ed. New York : McGraw-Hill. Oliva, P. E. (1992). *Developing the curriculum*, 3rd ed. N.Y : Harper Collins Publishers. Osborne, R.J., & Wittrock, M.C. (1983). Learning science: A generative process. *Science Educaation*, 67(4), 489-508. Okebukola, P. A. (1986). The influence of preferred learning styles on cooperative learning in science. *Science Education*, 70(5), 509-517. Pask, G. (1976). Style and strategies of learning. *British Journal of Educational Psychology*, 46, 128-148. Palmer, J. W. (2002). Web Site Usability, Design, and Performance Metrics. *Information Systems Research*, 13(2), 151-168. Peterson, P. L., & Janicki, T. C. (1979). Individual Characteristics and children's learning in large -group and small group approaches. *Journal of Educational Psychology* , 92(3), 544-555 Piaget, J. (1928). *Judgment and reasoning in the child*. London : Routledge & Kegan Paul. Piccoli, G., Ahmad, R., & Ives, B. (2001). Web-based virtual learning environments: A research Framework and a Preliminary Assessment of Effectiveness in Basic IT Skills Training. *MIS Quarterly*, 25(4), 401-426. Rafe, G., & Manley, J. H. (1997). Learning style and instructional methods in a graduate level engineering program delivered by video teleconferencing technology, *IEEE Frontiers in Education Conference*. (pp.1607-1612). Pennsylvania: University of Pittsburgh. Rai, A., Lang, S., & Welker, R. (2002). Assessing the Validity of IS Success Models: An Empirical Test and Theoretical Analysis. *Information Systems Research*, 13(1), 50-69. Rasmussen, K. L., & Davidson-Shivers, G. V. (1998). Hypermedia and learning Styles: Can performance be influenced? *Journal of Education Multimedia and Hypermedia*, 7(4), 291-308. Resnick, P., & Varian, H. R. (1996). Recommender systems. *Communication of ACM*, 40(3), 56-58. Rivard, S. (1987). Successful implementation of end-user computing. *Interfaces*, 17, 25-33. Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. New York: Oxford University Press. Rossett, A. (Ed.). (2002). *The ASTD e-Learning Handbook: Best Practices, Strategies, and Case Studies for an Emerging Field*. New York: McGraw Hill. Reynolds R. (2004). *XplanaZine*. Retrieved March 27, 2005. Form <http://www.xplanazine.com/> Ruble, T. L., & Stout, D. E. (1993). Learning style and end-user training: An unwarranted leap of faith. *MIS Quarterly*, 115-118. Savery, J.R., & Duffy, T. (1995). Problem based learning : an instructional model and it ' s constructivist framework. *Educational Technology*, 35(5), 31-38. Seddon, P. B. (1997). A respecication and extensiofn of the DeLone and McLean model of IS success. *Information. Systems Research*, 8, 240-253. Sein, M. K., & Robey, D. (1991) , Learning style and the efficacy of computer training methods. New York: McGraw-Hill. Small, R. V., & Gluck, M. (1994). The relationship of Motivational Conditions to effective instructional attributes: a magnitude scaling approach. *Educational Technology*, 34(10), 33-40. Staggers, N., & Norcio, A. F. (1993). Mental Models: Concepts for Human-Computer Interaction Research. *International Journal of Man-Machine Studies*, 38, 587-605. Swisher, K. (1994). American Indian learning styles survey: An assessment of teachers knowledge. *The Journal of Educational Issues of Language Minority Students*, 13, 59-77. Tristram Bielecki. (2004). Why Blogs Perform Better than Regular Websites in Google Rankings. Retrieved November 20, 2005, From http://blogopoly.blogspot.com/archives/2004_01_01_blogopoly_archive.html#107355775033153776 Venkatesh, V., & Davis, F. (1996). A model of the antecedents of perceived ease of use: Development and test. *Decision Sciences*, 27, 451-481. Von Glasersfeld, E. (1984). *An introduction to radical constructivism..* New York : Norton. Von Glasersfeld, E. (1988). Constructivism as scientific method. *Scientific Reasoning Research Institute Newsletter*, 3(2), 8-9. Von Glasersfeld, E. (1989). Constructivism in education. In T. Husen & Postlethwaite (Eds.), *The international encyclopedia of education*. Supplementary encyclopedia of education. Supplementary, New York: Pergamon Press, 1, 163-163. Vrasidas, C., & McIsaac, M. S. (1999). Factors influencing interaction in an online course. *The American Journal of Distance Education*, 13(3), 22-36. Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Translated by Knox and Carol. Cambridge. MA: Harvard University Press. Wagner, C. (2003). Put another (B)log on the wire: Publishing Learning logs as blogs. *Journal of Information Systems Education*, 14(2), 131-132. Webster, J., & Hacklery, P. (1997). Teaching Effectiveness in Technology Mediated Distance Learning. *Academy of Management Journal*, 40, 1282-1309. Webster, J., & Trevino, L. K. (1995). Rational and Social Theories as Complementary Explanations of Communication Media Choices: Two Policy Capturing Studies " . *Academy of Management Journal*, 38, 1544-1572. White, R. T., & Tisher, R. P. (1986). *Research on natural sciences*. Handbook of research on teching. New York: Macmillan. WebCT. (2005). Introducing WebCT vista modules. Retrieved February 19, 2005, From <http://www.webct.com> Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, 60, 2, 31-46. Zona R. (1999). The Economic Impacts of Unacceptable Web-Site Download.

