

The Effect of E-Learning System and Instructor Factors on Employee Training Effectiveness-Computer Self-Efficacy as Mode

吳文凱、錢天真

E-mail: 9800801@mail.dyu.edu.tw

ABSTRACT

This study investigated the effect of e-learning system factor and instructor factor on training effectiveness, particularly, the moderating effect of computer self-efficacy. The study were acquired through the purposive sampling method. Data for this study were collected from four implemented e-learning businesses. Results indicated that e-learning system factor and instructor factor have positive effects on training effectiveness, and computer self-efficacy plays a moderating role in the effect of system functionality on training effectiveness. In details, the higher degree of computer self-efficacy, the stronger relationship between system functionality and training effectiveness, vice versa. However, computer self-efficacy had no significant moderating effect on the relationship between other independent variables and training effectiveness.

Keywords : e-learning、system factor、instructor factor、computer-self efficacy、training effectiveness

Table of Contents

內容目錄 中文摘要	iiii 英文摘要
iv 誌謝辭	v 內容目錄
vi 表目錄	viii 圖目錄
ix 第一章 緒論	1 第一節 研究背景
景與動機 1	第二節 研究目的與問題 4
探討與假設推演 6	第二章 文獻 6
練成效 10	第三節 系統因素與員工訓練成效之關係 11
學者因素與員工訓練成效之關係 20	第四節 教 25
研究方法 29	第三章 研 29
操作性定義 30	第一節 研究架構 29
測量工具 32	第二節 研究假設 31
抽樣方法 38	第五節 預試分析 36
結果與討論 41	第七節 資料分析方法 39
討論 57	第一節 研究結果 41
結論 61	第五章 結論與建議 61
卷 66	第二節 建議 62
電子化學習的缺點 82	附錄A 預式問卷 78
2-4 Pituch and Lee(2006)之系統因素 9	表 2-1 電子化學習的優點 8
表 3-2 系統因素之衡量問卷 13	表 2-2 Selim(2007)之系統因素 13
33 表 3-4 電腦自我效能之衡量問卷 32	表 3-1 研究變項與操作性定義 30
. 35 表 3-6 預式樣本組成分析表 34	表 3-3 教學者因素之衡量問卷 32
. 38 表 4-1 樣本結構分析表 37	表 3-5 訓練成效之衡量問卷 34
. 43 表 4-3 教學者因素之因素結構與信度分析表 37	表 3-7 各構面之信度分析與主成份分析結果表 37
分析表 46 表 4-5 訓練成效之因素結構與信度分析表 41	表 4-2 系統因素之因素結構與信度分析表 41
. 50 表 4-7 系統因素對訓練成效迴歸分析表 44	表 4-3 教學者因素之因素結構與信度分析表 44
迴歸分析表 52 表 4-9 電腦自我效能與系統因素對員工訓練成效的層級迴歸分析表分 47	表 4-4 電腦自我效能之因素結構與信度分析表 47
54 表 4-10 電腦自我效能與教學者因素對員工訓練成效的層級迴歸分析表 51	表 4-5 訓練成效之因素結構與信度分析表 47
56 表 4-11 本研究結果彙整 52	表 4-6 各研究變數的描述性統計及相關分析表 51
圖 2-1 Liaw 3階層使用模型(3-TUM) 16	表 4-7 系統因素對訓練成效迴歸分析表 52
16 圖 3-1 本研究架構圖 29	表 4-8 教學者因素對訓練成效迴歸分析表 52
. 54	圖 4-1 電腦自我效能與系統功能性對員工訓練成效的交互作用 29

REFERENCES

- 一、中文部份 邱郁文，林益民，施東河(2007)，系統特性、任務特性與電腦自我效能對個人線上學習行為傾向影響，電子商務學報，9(2), 235-266。陳銘薰，許國賓(2007)，非同步電子化學習情境對學習知覺與使用態度傾向之影響，人力資源管理學報，7(3), 25-44。鍾瑞國，楊寶華(2006)，企業數位學習成效評鑑指標之研究，人力資源管理學報，6(1), 123-140。二、英文部分 Agarwal, R., Sambamurthy, V., & Stair, R. M. (2000). Research report: The evolving relationship between general and specific computer self-efficacy--An empirical assessment. *Information Systems Research*, 11(4), 418-430. Alliger, G. M., Tannenbaum, S. I., Bennett, W. Jr., & Shotland, H. T. A. (1997). A meta-analysis of the relations among training criteria. *Personnel Psychology*, 50(2), 341-358. Bailey, J. E., & Pearson, S. W. (1983). Development of a tool for measuring and analyzing computer user satisfaction. *Management Science*, 29(5), 530-545. Baker, J. D. (2004). An investigation of relationships among instructor immediacy and affective and cognitive learning in the online classroom. *Internet and Higher Education*, 7(1), 1-13. Bangert, A. W. (2004). The Seven principles of good practice: A framework for evaluating on-line teaching. *Internet and Higher Education*, 7(3), 217-232. Brosnan, M. J. (1998). The impact of computer anxiety and self efficacy upon performance. *Journal of Computer Assisted Learning*, 14(3), 223-234. Brown, S. P., Ganeshan, S., & Challagalla, G. (2001). Self-efficacy as a moderator of information-seeking effectiveness. *Journal of Applied Psychology*, 86(5), 1043-1051. Burgess, J. R. D., & Russell, J. E. A. (2003). The effectiveness of distance learning initiatives in organizations *Journal of Vocational Behavior*, 63(2), 289-303. Cappel, J. J., & Hayen, R. L. (2004). Evaluating e-learning: A case study. *The Journal of Computer Information Systems*, 44(4), 49-56. Chen, C. Y., Sok, P., & Sok, K. (2007). Exploring potential factors leading to effective training: An exclusive study on commercial banks in Cambodia. *Journal of Management Development*, 26(9), 843-856. Chen, N. S., Kinshuk, Wei, C. W., & Chen, H. J. (2008). Mining e-learning domain concept map from academic articles. *Computers & Education*, 50(3), 1009-1021. Chiu, C. M., Hsu, M. H., Sun, S. Y., Lin, T. C., & Sun, P. C. (2005). Usability, quality, value and e-learning continuance decisions. *Computers & Education*, 45(4), 399-416. Compeau, D., Higgins, C. A., & Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS Quarterly*, 23(2), 145-158. Compeau, D. R., & Higgins, C. A. (1995a). Computer self efficacy: Development of a measure and initial test. *MIS Quarterly*, 19(2), 189-211. Compeau, D. R., & Higgins, C. A. (1995b). Application of social cognitive theory to training for computer skills. *Information Systems Research*, 6(2), 118-143. Eom, S. B., Wen, H. J., & Ashill, N. (2006). The determinants of students' perceived learning outcomes and satisfaction in university online education : An empirical investigation. *Decision Sciences Journal of Innovative Education*, 4(2), 215-235. Gist, M. E. (1987). Self-Efficacy: Implications for organizational behavior and human resource management. *Academy of Management Review*, 12(3), 472-485. Hamid, A. A. (2002). e-learning Is it the ‘‘e’’ or the learning that matters? *Internet and Higher Education*, 4(3-4), 311-316. Harun, M. H. (2002). Integrating e-learning into the workplace. *Internet and Higher Education*, 4(3-4), 301-310. Hasan, B. (2006). Effectiveness of computer training: The role of multilevel computer self efficacy. *Journal of Organizational and End User Computing*, 18(1), 50-68. Hasan, B., & Ali, J. M. H. (2004). An empirical examination of a model of computer learning performance. *Journal of computer information systems*, 44(4), 27-33. Hayashi, A., Chen, C., Ryan, T., & Wu, J. (2004). The role of social presence and moderating role of computer self efficacy in predicting the continuance usage of e-learning systems. *Journal of Information Systems Education*, 15(2), 139-154. Hong, K. S. (2002). Relationships between students' and instructional variables with satisfaction and learning from a web-based course. *Internet and Higher Education*, 5(3), 267-281. Hong, W., Thong, J. Y. L., Wong, W. M., & Tam, K. Y. (2002). Determinants of user acceptance of digital libraries: An empirical examination of Individual differences and system characteristics. *Journal of Management Information Systems*, 18(3), 97-124. Igbaria, M., & Iivari, J. (1995). The effects of self efficacy on computer usage. *Omega*, 23(6), 587-605. Imamoglu, S. Z. (2007). An empirical analysis concerning the user acceptance of e-learning. *Journal of American Academy of Business*, 11(1), 132-137. Jex, S. M., & Bliese, P. D. (1999). Efficacy beliefs as a moderator of the impact of work-related stressors: a multilevel study. *Journal of Applied Psychology*, 84(3), 349-361. Johnson, R. D. (2005). An empirical investigation of sources of application-specific computer-self-efficacy and mediators of the efficacy—performance relationship. *International Journal of Human - Computer Studies* 62(6), 737-758. Johnson, R. D., Hornik, S., & Salas, E. (2008). An empirical examination of factors contributing to the creation of successful e-learning environments. *International Journal of Human-Computer Studies*, 66(5), 356-369. Kelly, H. F., Ponton, M. K., & Rovai, A. P. (2007). A comparison of student evaluations of teaching between online and face-to-face courses. *Internet and Higher Education*, 10(2), 89-101. Kirkpatrick, D. L. (1959). Techniques for evaluating training programs. *Journal of the American Society of Training Directors*, 13(11-12), 3-26. Kraiger, K., McLinden, D., & Casper, W. J. (2004). Collaborative planning for training impact. *Human Resource Management* 43(4), 337-351. Liaw, S. S., Huang, H. M., & Chen, G. D. (2007). Surveying instructor and learner attitudes toward e-learning. *Computers & Education*, 49(4), 1066-1080. Lim, H., Lee, S. G., & Nam, K. (2007). Validating E-learning factors affecting training effectiveness. *International Journal of Information Management*, 27(1), 22-35. Mackay, S., & Stockport, G. J. (2006). Blended Learning, Classroom and E-Learning. *The Business Review*, Cambridge, 5(1), 82-88. Marks, R. B., Sibley, S. D., & Arbaugh, J. B. (2005). A structural equation model of predictors for effective online learning. *Journal of Management Education*, 29(4), 531-563. Ng, Y. C. (2006). Levels of computer self-efficacy, computer use and earnings in China. *Economics Letters*, 90(3), 427-432. Ong, C. S., & Lai, J. Y. (2006). Gender differences in perceptions and relationships among dominants of e-learning acceptance. *Computers in Human Behavior*, 22(5), 816-829. Ong, C. S., Lai, J. Y., & Wang, Y. S. (2004). Factors affecting engineers' acceptance of asynchronous e-learning systems in high-tech companies. *Information & Management*, 41(6), 795-804. Pantazis, C. (2002). Maximizing e-learning to train the 21st century workforce. *Public Personnel Management*, 31(1), 21-26. Parikh, M., & Verma, S. (2002). Utilizing internet technologies to support learning: An empirical analysis. *International Journal of*

Information Management, 22(1), 27-46. Park, J. H., & Wentling, T. (2007). Factors associated with transfer of training in workplace e-learning. Journal of Workplace Learning, 19(5), 311-329. Piccoli, G., RamiAhmad, & 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. Pituch, K. A., & Lee, Y. k. (2006). The influence of system characteristics on e-learning use. Computers & Education, 47(2), 222-244. Rai, A., Lang, S. S., & Welker, R. B. (2002). Assessing the validity of Is success models : An empirical test and theoretical analysis. Information Systems Research, 13(1), 50-69. Roca, J. C., Chiu, C. M., & Martinez, F. J. (2006). Understanding e-learning continuance intention: An extension of the technology acceptance model. International Journal of Human-Computer Studies, 64(8), 683-696. Rovai, A. P., Ponton, M. K., Derrick, M. G., & Davis, J. M. (2006). Student evaluation of teaching in the virtual and traditional classrooms : A comparative analysis. Internet and Higher Education, 9(1), 23-35. Salanova, M., Grau, R. M., Cifre, E., & Llorens, S. (2000). Computer training, frequency of usage and burnout: the moderating role of computer self-efficacy. Computers in Human Behavior, 16(6), 575-590. Selim, H. M. (2003). An empirical investigation of student acceptance of course websites. Computers & Education, 40(4), 343-360. Selim, H. M. (2007). Critical success factors for e-learning acceptance: Confirmatory factor models. Computers & Education, 49(2), 396-413. Shih, H. P. (2006). Assessing the effects of self-efficacy and competence on individual satisfaction with computer use: an IT student perspective. Computers in Human Behavior, 22(6), 1012-1026. Song, L., Singleton, E. S., Hill, J. R., & Koh, M. H. (2004). Improving online learning: Student perceptions of useful and challenging characteristics Internet and Higher Education, 7(1), 59-70. Soong, M. H. B., Chan, H. C., Chua, B. C., & Loh, K. F. (2001). Critical success factors for on-line course resources Computers & Education, 36(2), 101-120. Tai, W. T. (2006). Effects of training framing, general self-efficacy and training motivation on trainees ' training effectiveness. Personnel Review, 35(1), 51-65. Tharenou, P., Saks, A. M., & Moore, C. (2007). A review and critique of research on training and organizational-level outcomes. Human Resource Management Review, 17(3), 251-273. Thong, J. Y. L., Hong, W., & Tam, K. Y. (2004). What leads to user acceptance of digital libraries? Communications of the ACM, 47(11), 79-83. Torkzadeh, R., Pflughoefl, K., & Hall, L. (1999). Computer self efficacy, training effectiveness and user attitudes : An empirical study. Behaviour of Information Technology, 18(4), 299-309. Vaughan, K., & MacVicar, A. (2004). Employees ' pre-implementation attitudes and perceptions to e-learning: A banking case study analysis. Journal of European Industrial Training, 28(5), 400-413. Venkatesh, V. (2000). Determinants of perceived ease of use : Integrating control, intrinsic motivation, and emotion into the technology acceptance mode. Information Systems Research, 11(4), 342-365. Venkatesh, V., & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: Development and test. Decision Sciences, 27(3), 451-481. Volery, T., & Lord, D. (2000). Critical success factors in online education. The International Journal of Educational Management, 14(5), 216-223. Wang, Y. S. (2003). Assessment of learner satisfaction with asynchronous electronic learning systems. Information & Management, 41(1), 75-86. Wang, Y. S., Wang, H. Y., & Shee, D. Y. (2007). Measuring e-learning systems success in an organizational context: Scale development and validation. Computers in Human Behavior 23(4), 1792-1808. Webster, J., & Hackley, P. (1997). Teaching effectiveness in technology-mediated distance learning. Academy of Management Journal, 40(6), 1282-1309. Welsh, E. T., Wanberg, C. R., Brown, K. G., & Simmering, M. J. (2003). E-learning: emerging uses, empirical results and future directions. International Journal of Training and Development, 7(4), 245-258. Yi, M. Y., & Hwang, Y. (2003). Predicting the use of web-based information systems: self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model. International Journal of Human-Computer Studies, 59(4), 431-449. Young, A., & Norgard, C. (2006). Assessing the quality of online courses from the students ' perspective. Internet and Higher Education, 9(2), 107-115. Zhang, D., & Nunamaker, J. F. (2003). Powering e-learning in the new millennium: An overview of e-learning and enabling technology. Information Systems Frontiers, 5(2), 207-218.