THE EFFECTIVENESS OF TRADITIONAL AND ONLINE COURSE DELIVERY TOWARDS STUDENTS' PERFORMANCE

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UNIVERSITI UTARA MALAYSIA

JAN 2015

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Thesis Submitted to the Centre for Graduate Studies,
Universiti Utara Malaysia,
In fulfilment of the Requirement for the Master of Science Management

KEBERKESANAN PENYAMPAIAN KURSUS TRADISIONAL DAN DALAM TALIAN KE ARAH PENCAPAIAN PELAJAR

Abstrak

Teknologi-teknologi baru menawarkan kaedah alternatif untuk 'konseptualisasi' dan menyampaikan pendidikan dalam usaha menggalakkan pembelajaran. Pelbagai keputusan telah dicapai bagi kajian perbandingan pencapaian pelajar di dalam kelas dalam talian dan kelas tradisional. Satu tinjauan telah dilakukan di kalangan pelajar Ijazah Sarjana Muda Pentadbiran Perniagaan (kewangan) di UiTM Shah Alam untuk mengkaji kesan pencapaian pelajar terhadap hubungan antara penyampaian kursus tradisional dan dalam talian. Memberi panduan kepada kajian ini, tiga soalan ditanya dan tiga hipotesis yang telah disediakan dan diuji 0.05. Reka bentuk korelasi dan persampelan rawak mudah telah digunakan untuk memilih saiz sampel 304 responden. Keputusan menunjukkan bahawa kedua-dua kursus memerlukan perhatian kerana faktor-faktor yang telah menyumbang kepentingan yang sama kepada pencapaian pelajar.

Kata Kunci:

Pendidikan dalam talian, pembelajaran dalam talian, e-pembelajaran, pembelajaran jarak jauh, Face to Face (F2F), pendidikan tradisional.

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Abstract

Emerging technologies offer alternative ways to conceptualize and deliver education in pursuit of promoting learning. Numerous studies have compared students' performance in online classes and traditional classes, but with mixed results. A survey was conducted among Bachelor of Business Administration (Finance) students at UiTM Shah Alam to investigate the effect of students' performance on the relationship between traditional and online course delivery. To guide this study, three questions were asked and three hypotheses were formulated and tested 0.05 level of significance. The design is correlation and simple random sampling was used to select sample size of 304 respondents. The results suggest that both courses need attention because those factors have contributed equal significance to students' performance.

Keywords:

Online education, online learning, e-learning, distance learning, Face to Face (F2F), traditional education.

Acknowledgement

I wish to express my profound and sincere gratitude to my supervisor, Dr. Fais Bin Ahmad for supervising my project from the beginning to the end and imparting knowledge to me.

My warmest gratitude also goes to the research location and staff who worked diligently to provide the information I needed to conduct my research.

I will also like to express my sincere appreciation to my family for their support during my period of study and all persons who in diverse ways have contributed to the success of this project.

List of Tables

	Page
Table 3.1 Sources of Instruments	59
Table 3.2 Reverse-score items	60
Table 3.3 Data Collection Instruments Responses	63
Table 4.1 Cronbanch's Alpha for pilot study	68
Table 4.2 Demographic statistic	71
Table 4.3 Descriptive statistics	72
Table 4.4 Correlation analysis	73
Table 4.5 T-test analysis between Gender and Dependent Variable	74
Table 4.6 Multiple Regression Analysis Result	75
Table 4.7 Hypothesis Summary	77

Table of Contents

	Page
ABSTRAK	i
ABSTRACT	ii
ACKNOWLEDGEMENTS	iii
LIST OF TABLES	iv
Chapters	
1. INTRODUCTION	
1.0 Background of Study	5
1.1 Problem Statement	11
1.2 Objective Study	15
1.3 Research Question	15
1.4 Scope of Study	16
1.5 Significance of the Study	16
1.6 Limitations	19
1.7 Term Definitions	19
1.8 Organization of Remaining Chapters	21
2. LITERATURE REVIEW	
2.0 Introduction	22
2.1 Review of Previous Research Studies	22
2.1.1 Students' performance	
2.1.2 Traditional Course Delivery	
2.1.3 Online Course Delivery	
2.1.4 Student demographics – Gender	
2.2 Theories	40
2.2.1 Equivalency Theory	
2.2.2 Theory of Experiential Learning Styles	
2.2.3 Teacher-Centered vs. Student-Centered Model	
2.2.4 Engagement Theory	
2.2.5 Transactional Theory	

	2.3 Relationship between traditional course delivery and students	3'
	performance	44
	2.4 Relationship between online course delivery and students'	
	performance	47
3. ME	THODOLOGY	
	3.1 The Research Framework	52
	3.2 Hypothesis	53
	3.3 Research Design	53
	3.3.1 Type of Study	
	3.3.2 The Quantitative Analytical Approach	
	3.3.3 Sources of Data	
	3.3.4 Unit of Analysis	
	3.3.5 Population and Sampling Frame	
	3.4 Measurement of Variables	58
	3.4.1 Validation of Instruments	
	3.4.2 Pilot study	
	3.4.3 Reverse-scored Item	
	3.4.4 Back translation	
	3.5 Data Collection and Administration	62
	3.6 Sampling Design	63
	3.6.1 Probability Sampling: Simple Random Sampling	
	3.7 Data Analysis Techniques	64
	3.7.1 The reliability of Instruments	
	3.7.2 Descriptive Statistic	
	3.7.3 Hypothesis Testing	
	3.7.4 Inferential Statistic: Pearson Correlation	
	3.8 Conclusion	66
4 DE	CLILTS AND DISCUSSION	
4. KE)	SULTS AND DISCUSSION 4.0 Introduction	67
		67 67
	4.1 Normality Test	07

4.2 Missing Data	68
4.3 Pilot Survey	68
4.4 Frequency Analysis	69
4.4.1 The Demography of Respondents	
4.5 Descriptive Statistic	72
4.6 Hypothesis Testing	72
4.6.1 Correlation Result Analysis	
4.6.2 T-test Result Analysis	
4.6.3 Multiple Regression Analysis between Independent	
Variables and Dependent Variable	
4.7 Hypothesis Summary	77
5. CONCLUSIONS AND RECOMMENDATIONS	
5.0 Introduction	78
5.1 Discussion	78
5.1.1 Hypotheses Testing Result	
5.1.1.1 Results of Correlation	
5.2 Recommendation, Limitation and Suggestion for Future	
Research	81
5.3 Conclusion	86
REFERENCES	88
APPENDICES	97

CHAPTER 1

INTRODUCTION

Nowadays, information plays a meaningful and vital role in the economic development in the development of the community and the education process as well. The explosive development of information technology has brought to the birth of the information society and makes it essential for the society to follow and convenient to the development of recent technologies. The explosive growth of information and the total amount of students have brought some difficulties and this new technology has take part in the development of education process and quality applied in educational institutions has become necessary. This is supported by Keser, 1998.

Various forms of online education have been for approximately 100 years. Findings by Lemak, Shin, Reed and Montgomery, 2005; Madden, 2003 have noticed a range of correspondence course in the 1800 's in universities such as Pennsylvania State University, University of Chicago and Illinois Wesleyan University. While there is increased demand for online courses, but it is still less gratifying even with the changes in technology that is becoming increasingly sophisticated. Approximately 3.2 million students take slightly one online course from U. S. Institutions by the fall of 2005, about twice the number from 3 years back (Allen and Seaman, 2006). This increment has been expanded this year recently, to a new number of 6.7 million (Allen and Seaman, 2013).

The contents of the thesis is for internal user only

References

- Allen, I.E. & Seaman, J. (2006). Making the Grade: Online Education in the United States, 2006. Needham, MA: The Sloan Consortium.
- Allen, I. E. & Seaman J. (2010). Class differences: Online education in the United States, 2010. Retrieved from Sloan Consortium website: http://sloanconsortium.org/publications/survey/pdf/class_differences.pdf
- Allen, I.E. & Seaman, J. (2013). Changing Course: Ten Years of Tracking Online Education in the United States, 2013. Needham, MA: The Sloan Consortium.
- Alstete, J. and Beutell, N. (2004). Performance indicators in online distance learning courses: a study of management education. *Quality Assurance in Education*, 12(1), 6-14.
- Althaus, S.L. (1997). Computer-Mediated Communication in the University Classroom: An Experiment on Time Discussions. *Communication Education*, 46(3), 158-174.
- Arbaugh, J.B. (2000a). Virtual Classroom Characteristics and Student Satisfaction in Internet-Based MBA Courses. *Journal of Management Education*, 24(1), 32-54.
- Arbaugh, J.B. (2000c). Virtual Classrooms versus Physical Classrooms: An Exploratory Study of Class Discussion Patterns and Student Learning in an Asynchronous Internet-Based MBA Course. *Journal of Management*, 24, 213-233
- Arbaugh, J.B. (2000d). An Exploratory Study of the Effects of Gender on Student Learning and Class Participation in an Internet-Based MBA Course. *Management Learning*, *31*(4), 533-549.
- Arbaugh, J.B. & Stelzer, L. (2003). Learning and teaching via the web: what do we know? In C. Wankel & R. DeFillippi (eds.) Educating Managers with Tomorrow's Technologies. Greenwich, CT: Information Age Publishing, (17-51).
- Arbaugh, J.B. (2005b). Is there an optimal design for online MBA courses? *Academy of Management Learning & Education, 4,* 135-149.
- Arbaugh, J. B., & Benbunan-Fich, R. (2006). An investigation of epistemological and social dimensions of teaching in online learning environments. *Academy of Management Learning & Education*, 5(4), 435-447.

- Atchley, W., Wingenbach, G., & Akers, C. (2013). Comparison of Course Completion and Student Performance through Online and Traditional Courses. 14(4).
- Barrett, E. & Lally, V. (1999). Gender differences in an online learning environment. *Journal of Computer Assisted Learning*, 15, 48-60.
- Bearden, E. B., Robinson, K, & Deis, M. H. (2002, Summer). A statistical analysis of dental hygiene students' grades in online and on-campus course and performance on the National Board Dental Hygiene Exams. *Journal of Dental Hygiene*, 76(3), 213-217. Retrieved January 20, 2014 from the Expanded Academic database.
- Beare, P.L. (1989). The comparative effectiveness of videotape, audiotape and telecture. *The American Journal of Distance Education* 3, 57-66.
- Bejerano, Arleen R. (2008). Face-to-Face or Online Instruction? Face-to-Face is Better. *A Publication of The National Communication Association*. *3*(3). Retrieved from https://www.natcom.org/CommCurrentsArticle.aspx?id=884
- Beller, M., & Gafni, N. (2000). Can item format (multiple choice vs. openended) account for gender differences in mathematics achievement? Sex Roles, 42(1-2), 1-21.
- Bengiamin, N., Johnson, A., Zidon, M., Moen, D. and Ludlow, D. (1998)
 The Development of an Undergraduate Distance Learning
 Engineering Degree for Industry A University/Industry
 Collaboration. *Journal of Engineering Education*, 87(3), 277–282.
- Bernard, R. M., Abrami, P.C., Lou, Y., Borokhovski, E., Wade, A., Wozney, L., Wallet, P.A., Fiest, M., and Huang, B. (2004). How does distance education compare with classroom instruction? A meta-analysis of the empirical literature. *Review of Educational Research*, 74 (3) 379–439.
- Bligh, D. A. What's the Use of Lecturing? Devon, England: Teaching Services Centre, University of Exeter, 1971.
- Bocchi, J., Eastman, J.K., & Swift, C.O. (2004). Retaining the online learner: profile of students in an online MBA program and implications for teaching them. *Journal of Education for Business*, 245-253.
- Byron W. Brown & Carl E. Liedholm, 2002. Can Web Courses Replace the Classroom in Principles of Microeconomics? *American Economic Review, American Economic Association*, 92(2), 444-448.

- Campbell, K. (1999). The Promise of Computer-Based Learning: Designing for Inclusivity. *IEEE Technology and Society Magazine*, 18(4), 28-34.
- Cheung, L., & Kan, A. (2002). Evaluation of factors related to student performance in a distance-learning business communication course. *Journal of Education for Business*, 77 (5), 257–263.
- Chickering, A.W. & Ehrmann, S.C. (1994). Implementing the Seven Principles: Technology as Lever. Seven Principles Resource Center, Winona State University.
- Craig, A.., Fisher, J., and Dawson, L. (2005). Evaluating Intervention programs for Women in IT. Proceedings of the Qualitative Research in IT and IT in Qualitative Research Conference, Brisbane, Australia, Griffith University.
- Daniel, M. and Diane, H. (2006). Factors Affecting Student Performance And Satisfaction: Online Versus Traditional Course Delivery. *Journal of Computer Information Systems*, 25-32
- DeLoughry, T. J. (1995). Distance-learning program inflames Maine faculty. *The Chronicle of Higher Education*, 41(30), A24-25.
- Donovan, W.J. & Nakhleh, M.B. (2001). Students' Use of Web-Based Tutorial Materials and Their Understanding of Chemistry Concepts. *Journal of Chemical Education*, 78(7), 975-980.
- Draves, W. A. (2000). Teaching online. River Falls, WI: LERN Books.
- Driscoll, A., Jicha, K., Hunt, A. N., Tichavsky, L., & Thompson, G., (2012). Can Online Courses Deliver In-class Results? A Comparison of Student Performance and Satisfaction in an Online versus a Faceto-face Introductory Sociology Course. *Teaching Sociology*, 40(4), 312-331. doi: 10.1177/0092055X12446624
- Dutton, J., Dutton, M. & Perry, J. (2002). How do online students differ from lecture students? *Journal of Asynchronous Learning Networks*, 6(1). Retrieved at www.sloanc.org/publications/jaln/v6n1/v6n1_dutton.asp.
- Elliot, A., & McGregor, H. (2001). A 2 x 2 achievement goal framework. Journal of Personality and Social Psychology, 80, 501-519.
- Ericksen, S. C. "The Lecture." Memo to the Faculty, no. 60. Ann Arbor: Center for Research on Teaching and Learning, University of Michigan, 1978.

- Faux, T. L., & Black-Hughes, C. (2000, July). A comparison of using the internet versus lectures to teach social work history. *Research on Social Work*, 10(4), 454-466.
- Felder, R.M., Felder, G.N., and Dietz, E.J. (1998). A Longitudinal Study of Engineering Student Performance and Rentention: v. Comparisons with Traditionally-Taught Students. *Journal of Engineering Education*, 87(4), 469-480.
- Flynn, A., Concannon, F., & Bheachain, C. N. (2005). Undergraduate students' perceptions of technology-supported learning: The case of an accounting class. *ELearning*, 4(4), 427-444.
- Fortune, M. F., Shifflett, B., & Sibley, R. E. (2006). A comparison of online (high tech) and traditional (high touch) learning in business communication courses in Silicon Valley. *Journal of Education for Business*, 81(4), 210-214.
- Fredda, J.V. (2000). Comparison of selected student outcomes for Internetversus campus-based instruction. Dissertation: Nova Southeastern University.
- Friday, E., Friday-Stroud, S.S, Green, A.L., & Hill, A.Y. (2006). A multisemester comparison of student performance between multiple traditional and online sections of two management courses. *Journal* of Behavioral and Applied Management, 8, 66-81.
- Gefen, D. & Straub, D. W. (1997). Gender Differences in the Perception and Use of E-mail: An Extension to the Technology Acceptance Model. *MIS Quarterly*, 21(4), 389-400.
- Grandzol, C.J. and Grandzol, J.R. (2010). Interaction in Online Courses: More is NOT Always Better. *Online Journal of Distance Learning Administration*, *XIII*(II).
- Gregory, M.Y. (1997). Gender Differences: An Examination of Computer-Mediated Communication. Presented at the Annual Meeting of the Southern States Communication Association, Savannah, GA.
- Hacker, R. And Sova, B. (1998), Initial Teacher Education: A Study of the Efficacy of Computer Mediated Courseware Delivery in a Partnership Context. *British Journal of Educational Technology*, 29(4), 3312-41.
- Harasim, L., Hiltz, S., Teles, L. and Turoff, M. (1998), Learning Networks: A Field Guide to Teaching and Learning Online, mit Press, Cambridge, MA.

- Hartman, J., Dziuban, C., & Moskal, P. (2000). Faculty Satisfaction in ALNs: A Dependent or Independent Variable. *Journal of Asynchronous Learning Networks*, 4(3), http://www.aln.org/alnweb/journal/Vol4_issue3/fs/hartman/fs-hartman.htm.
- Hatton, D. (1995). Women and the "L": A Study of the Relationship between Communication Apprehension, Gender, and Bulletin Board. Presented at the Annual Meeting of the Speech Communication Association, San Antonio, TX.
- Herman, T., & Banister, S. (2007). Face-to face versus online coursework: A comparison of costs and learning outcomes. *Contemporary Issues in Technology Education*, 7(4), 318-326.
- Hiltz, S.R & Shea, P. (2005). The student in the online classroom. In S.R. Hiltz & R. Goldman (Eds.) Learning Together Online: Research on Asynchronous Learning Networks (pp. 145-168). Mahwah, NJ: Lawrence Erlbaum Associates.
- IDEA Survey. Kansas State University IDEA Web site. Available at: http://www.idea.ksu.edu/. Retrieved January 25, 2014.
- Kim, E. C. and Kelough, R.D. (1987). A Resource Guide for Secondary School Teaching. In W. Havice, A Comparison of College Students' Achievement Following Traditional and Integrated Media Presentations. *Journal of Industrial Teacher Education*, 35(4).
- Kleinman, J. and E. Entin. (2002). Comparison of In-Class and Distance Learning Students' Performance and Attitudes in an Introductory Computer Science Course. *Journal of Computing Sciences in Colleges*, 17(6), 206-219.
- Kokemuller, N. (2014). Online Learning Vs. Classroom Learning. *Globalpost*. Retrieved from http://everydaylife.globalpost.com/online-learning-vs-classroom-learning-4190.html
- Koory, M. A. (2003). Differences in learning outcomes for the online and F2F versions of "An Introduction to Shakespeare". *Journal for Asynchronous Learning Networks*, 7(2), 18-39.
- Korporshoek, H., Kuyper, H., van der Werf, G., & Bosker, R. (2011). Who succeeds in advanced mathematics and science courses? *British Educational Research Journal*, *37*(3), 357-380.
- Lemak, D. J., Shin, S.J., Reed, R. & Montgomery, J.C. (2005). Academy of Management Learning & Education, 4, 150-159.

- Madden, M.E. (2003). Planning for distance learning: issues and strategies. Journal of Behavioral and Applied Management, 4, 254-281.
- McEwen, B.C. (2001). Web-assisted and online learning. *Business Communication Quarterly*, 64(2), 98-103.
- Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2009). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. U.S. Department of Education Office of Planning, Evaluation, and Policy Development Policy and Program Studies Service Center for Technology in Learning. Retrieved December 2, 2013 from www.ed.gov/about/offices/list/opepd/ppss/reports.html
- Moskal, P.D. & Dziuban, C.D. (2001). Present and future directions for assessing cybereducation: the changing research paradigm. In L.R. Vandervert, L.V. Shavinina, & R.A. Cornell (Eds.) Cybereducation: the future of long-distance learning (pp. 157-184). New York: Mary Ann Liebert
- Naidu, S. (1997). Collaborative reflective practice: an instructional design architecture for the Internet. *Distance Education, Vol. 18* No. 2, pp. 257-83.
- Nellen, A. (2003). Using Technology to Teach Nontraditional Students. *The Tax Advisor*, *34*(5), 290-292.
- Neuschmidt, O., Barth, J., & Hastedt, D. (2008). Trends in gender differences in mathematics and science (TIMSS 1995-2003). *Studies in Educational Evaluation*, *34*, 56-72.
- O'Malley, John & Harrison McCraw, (1999) Students Perceptions of Distance Learning, Online Learning and the Traditional Classroom. *Online Journal of Distance Learning Administration*, II(IV).
- Paden, R. R. (2006). A comparison of student achievement and retention in an introductory math courses delivered in online, face-to-face, and blended modalities. Retrieved from ProQuest. (UMI 3237076)
- Palloff, R. M., & Pratt, K. (2003). The virtual student—A profile and guide to working with online learners. San Francisco: Jossey-Bass.
- Pendleton, R. (2005). Student Performance Objectives. *Mozena Publications*.
- Petre, D. And Harrington, D. (1996), The Clever Country? Australia's Digital Future, Lansdowne, Sydney,

- Phipps, R., and Merisotis, J. (1999). What's the Difference? A review of Contemporary Research on the Effectiveness of Distance education in Higher Education. The institute for Higher Education policy. Retrieved at http://www.ihep.com/Pubs/PDF/Difference.pdf
- P. Sharmini (2014). Adult Education: Learn While You Earn. *New Straits Time*. http://www2.nst.com.my/opinion/editorial/adult-education-learn-while-you-earn-1.490583
- Proserpio, L. & Gioia, D.A. (2007). Teaching the virtual generation. *Academy of Management Learning & Education*, 6, 69-80.
- Quible, Z.K. (1997). The efficacy of several writing feedback systems. Business Communication Quarterly, 60, 109-123.
- Russell, T. L. (1999). The no significant difference phenomenon. NC: Office of Instructional Telecommunications, North Carolina State University.
- Schrum, L. & Hong, S. (2002). Dimensions and strategies for online success: Voices from experienced educators. *Journal of Asynchrous Learnig Networks*, 6 (1). Retrieved at http://www.aln.org/al nweb/journal/jaln-vol6issue1.htm
- Selim, H. M. (2005). E-learning Critical Success Factors: An Exploratory Investigation of Student Perceptions. In M. Khosrow-Pour (ed.) Managing Modern Organizations with Information Technology. Proceedings of the 2005 IRMA International Conference, San Diego, 340-346.
- Shea, P, Swan, K., Fredericksen, E., & Pickett, A. (2002). Student satisfaction and reported learning in the SUNY learning network. In J. Bourne & J.C. Moore, (Eds.) *Quality Online Education*, *3*, 145-155. Needham, MA: Sloan Center for Online Education.
- Shneiderman, B., Borkowski, E., Alavi, M. And Norman, K. (1998)
 Emergent Patterns of Teaching/Learning in Electronic Classrooms.
 Retrieved from
 ftp://ftp.cs.umd.edu/pub/hcil/Reports-Abstracts-Bibliography/98-04HTML/98-04.html
- Shoenfeld-Tacher, R., McConnel, S., & Graham, M. (2001). Do no harm-A comparison of the effects of on-line vs. traditional delivery media on a science course. *Journal of Science Education and Technology*, 10(3), 257-265.
- Smith, L.J. (2001). Content and delivery: a comparison and contrast of electronic and traditional MBA marketing planning courses. *Journal of Marketing Education*, 23, 35-44.

- Soong B.M.H., Chan, H.C., Chua, B.C. and Loh, K.F. (2001). Critical Success Factors for on-line Course Resources. *Computers & Education*. *36*: 101-120.
- Stewart, C.M., Shields, S.F., Monolescu, D., & Taylor, J.C. (1999). Gender and Participation in Synchronous CMC: An IRC Case Study. *Interpersonal Computing and Technology*, 7(1-2), 1-25.
- Sullivan, P. (2001). Gender Differences and the Online Classroom: Male and Female College Students Evaluate Their Experiences. *Community College Journal of Research and Practice*, 25, 805-818.
- Symanzik, J. & Yukasinovic, N. (2003). Teaching Experiences with a Course on "Web-Based Statistics." *The American Statistician*, *57*(1), 46-50.
- Tallent-Runnels, M. K., Lan, W., Cooper, S., Ahern, T. C., Shaw, S. M. & Liu, X. (2006). Teaching courses online: A review of the research. *Review of Educational Research* 76 (1), 93-135.
- Terry, L. D., & Diane, E., (2010). Learner-Centered Inquiry in Undergraduate Biology: Positive Relationships with Long-Term Student Achievement. *CBE Life Sci Educ.* 9(4): 462–472. doi: 10.1187/cbe.10-02-0011
- Tucker, S.Y. (2000). Assessing the Effectiveness of Distance Education versus Traditional On-Campus Education. Presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.
- Ukueze AC 2007. Learner variable of academic performance and Adjustment of Junior Secondary Student. *The Counsellor*, 23(2): 172-183.
- Ury, G. (2005). "A Longitudinal Study Comparing Undergraduate Student Performance in Traditional Courses to the Performance in Online Course Delivery." *The Information Systems Education Journal*, 3(20), retrieved from http://isedj.org/3/20/
- Ury, McDonald, McDonald and Dorn (2006). "Student Performance Online vs Onground: A Statistical Analysis of IS Courses," *Information Systems Education Journal*, 4 (98).
- U.S. Department of Education retrieved on Jan 21, 2014 from http://www.ed.gov/race-top/district-competition/definitions
- Volery, T. and Lordd, D. (2000). Critical Success Factors in Online Education. *The International Journal of Educational Management*. 14: 216-223.

- Wallace, D. and Mutooni, P. (1997). A Comparative Evaluation of World Wide Web-Based and Classroom Teaching, *Journal of Engineering Education*, Vol. 86, No. 3, pp. 211–219.
- Warren, L. L. & Holloman, H. L. (2005). On-line instruction: Are the outcomes the same? *Journal of Instructional Psychology*, 32(2), 148-150.
- Watkins-Miller, E. (1996). Educational Facilities: A New Season brings Familiar Problems. *Buildings*, 90(1), 24.
- Weber, J. M., & Lennon, R. (2007). Multi-course comparison of traditional versus web-based course delivery systems. *The Journal of Educators Online*, 4(2), 1-19.
- Weigel, V. B. (2002). Deep learning for a digital age: technology's untapped potential to enrich higher education. San Francisco: Jossey-Bass.
- Wolfe, J.L. (1999). Why do Women Feel Ignored? Gender Differences in Computer-Mediated Classroom Interactions. *Computers and Composition*, 16(1), 153-166.
- Xu, D. & Jaggars, S. S. (2013). CCRC Working Paper No. 54 Adaptability to Online Learning: Differences Across Types of Students and Academic Subject Areas.
- Young, S. and McSporran, M. (2001). Confident Men Successful Women: Gender Differences in Online Learning. *EdMedia*, pp. 1-8.
- Zhang D. (2005). Interactive Multimedia Based E-learning: A study of Effectiveness, *American Journal of Distance Education*; 19(3), 149-162