REFERENCES

Abdal-Haqq, I. (1998). Constructivism in teacher education: Considerations for those who would link practice to theory [Electronic Version]. *ERIC Digest*. Retrieved July 13, 2008, from http://www.ericdigests.org/1999-3/theory.htm.

Academic Skills Office. (n.d.). *Academic skills online: tUNEup*. Retrieved April 26, 2009, from http://www.une.edu.au/tlc/aso/students/programs/tuneup/

Alexander, S., & Boud, D. (2001). Learners still learn from experience when online. In J. Stephenson (Ed.), *Teaching and learning online: Pedagogies for new technologies* (pp. 3-15). London: Kogan Page.

Allen, E., & Seaman, A. (2007). Likert scales and data analyses. *Quality Progress, 40*(7), 64-65.

Anderson, B. (2006). Writing power into online discussion. *Computers and Composition, 23*(1), 108-124.

Anderson, B., & Simpson, M. (2008). Acting with integrity online: Some questions for educators. In *Hello! Where are you in the landscape of educational technology? Proceedings ASCILITE Melbourne 2008* (pp. 35-38).

Andrews, R., & Haythornthwaite, C. (2007). Introduction to e-learning research. In R. Andrews & C. Haythornthwaite. (Eds.), *The SAGE handbook of e-learning research* (pp. 1-52). London: SAGE.

Anshel, M. (1995). Development of a rating scale for determining competence in basketball referees: Implications for sport psychology. *The Sports Psychologist, 9*(1), 4-28.

Anshel, M., & Webb, P. (1991). Defining competencies for effective refereeing. *Sports Coach, 15*(3), 33-37.

Anshel, M., Housner, L., & Cyrs, T. (1987). Defining competence for effective coaching of high school football. *Journal of Applied Research in Coaching and Athletics, 2*(2), 79-95.

Aragon, S., Johnson, S., & Shalik, N. (2000). The influence of learning style preference on student success in online vs, face to face environments. In G. Davies & C. Owen (Eds.), *WebNet world conference on the WWW and Internet volume 2000* (pp. 17-22). Chesapeake, VA: AACE.

Arif, A. (2001). Learning from the web: Are students ready or not? *Educational Technology & Society*, 4(4), 32-38.

Australian Universities Teaching Committee (2002). The centrality of learning. Retrieved August 15, 2005, from www.backingaustraliasfuture.gov.au/submissions/crossroads/pdf/10.pdf

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1986). *Social foundations of thought and action: A social-cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Barbour, M., & Collins, M. (2005). Online writing as an indicator of student performance [Electronic Version]. *International Journal of Instructional technology and distance learning.* Retrieved October 11, 2008, from http://www.itdl.org/Journal/Aug_05/article02.htm.

Barnes, C., & Tynan, B. (2007). The adventures of Miranda in the brave new world: Learning in a Web 2.0 millennium. *ALT-J Research in Learning Technology, 15*(3), 189-200.

Bauer, K., Chin, K., & Chang, V. (2000). *Web-based learning: Aspects of cultural differences.* Retrieved August 15, 2005, from http://is2.lse.ac.uk/asp/aspecis/20000068.pdf

Bell, M., Bush, D., Nicholson, P., O'Brien, D., & Tran, T. (2002). Universities Online: a survey of online education and services in Australia. *Occasional Paper Series.* Retrieved August 15, 2005, from http://www.dest.gov.au/sectors/higher_education/publications_resources/ summaries_brochures/universities_online.htm

Benbunan-Fich, R., Hiltz, S., & Harasim, L. (2005). The online interaction learning model: An integrated theoretical framework for learning networks. In S. Hiltz & R. Goldman (Eds.), *Learning together online research on asynchronous learning networks* (pp. 19-37). Mahwah, NJ: Lawrence Erlbaum.

Bernard, R., Rojo de Rubalcava, B., & St-Pierre, D. (2000). Collaborative online distance learning: Issues for future practice and research. *Distance Education, 21*(2), 260-277.

Bernardin, H., LaShells, M., Smith, P., & Alvares, K. (1976). Behavioral expectation scales: Effects of development procedures and formats. *Journal of Applied Psychology, 61*(1), 75-79.

Biggs, J. (1996). Enhancing teaching through constructive alignment. *Higher Education, 32*(347 - 364).

Biggs, J., & Moore, P. (1992). *The Process of Learning* (3rd ed.). New York: Prentice-Hall.

Birch, P. (2002). *E-Learner competencies.* Retrieved August 1, 2005, from http://learningcircuits.org/2002/jul2002/birch.html

Blaikie, N. (2003). *Analyzing quantitative data: From description to explanation.* London: Sage.

Blayney, P. (2007). Student preference for feedback tone and effect on learningoutcomes. In C. Montgomerie & J. Seale (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2007* (pp. 2729-2732).Chesapeake, VA: AACE.

Blood, M. (1974). Spin-offs from behavioral expectation scale procedures. *Journal of Applied Psychology, 59*(4), 513-515.

Bond, T., & Fox, C. (2007). *Applying the Rasch model: Fundamental measurement in the human sciences* (2nd ed.). Mahwah: NJ: Lawrence Erlbaum.

Bonk, C. (2004a). The Perfect E-Storm emerging technology, enormous learner demand, enhanced pedagogy, and erased budgets Part 1: Storms #1 and #2 [Electronic Version]. *The Observatory on Borderless Higher Education.* Retrieved September 30, 2006, from www.publicationshare.com/part1.pdf

Bonk, C. (2004b). The Perfect E-Storm emerging technology, enormous learner demand, enhanced pedagogy, and erased budgets Part 2: Storms #3 and #4 [ElectronicVersion]. *The Observatory on Borderless Higher Education.* Retrieved September 30 , 2006, from www.publicationshare.com/part2.pdf

Bonk, C., & Cunningham, D. (1998). Searching for the learner-centered, constructivist and sociocultural components of educational learning tools. In C. Bonk & K. S. King (Eds.), *Electronic collaborators: Learner-centered technologies for literacy, apprenticeship and discourse* (pp. 25-50). Mahwah, NJ: Lawrence Erlbaum.

Bonk, C., & Wisher, R. A. (2000). *Applying collaborative and e-learning tools to military distance learning: A research framework. (Technical Report #1107).* Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Borman, W., White, L., & Dorsey, D. (1995). Effects of ratee task performance and interpersonal factors on supervisor and peer performance ratings. *Journal of Applied Psychology, 80*(1), 168-177.

Bouhnik, D., & Marcus, T. (2006). Interaction in distance-learning courses. *Journal of the American Society for Information Science and Technology, 57*(3), 299-305.

Bradley, D., & Pursley, R. (1987). Behaviorally anchored rating scales for Patrol Officer performance appraisal: development and evaluation. *Journal of Police Science and Administration*, 15(1), 37-45.

Brentari, E., Golia, S., & Manisera, M. (2006). Analysing ordinal data to measure customer satisfaction: a comparison between the Rasch model and CatPCA. Retrieved 11th December, 2008, from www.mtisd06.unior.it/collegamenti/MTISD%202006/Abstracts/03_Brentari %20_1_.pdf

Briggs Myers, I. (1998). *Introduction to type: A guide to understanding your results on the Myers-Briggs Type Indicator* (6th ed.). Mountain View, CA: Consulting Psychologists Press.

Brown, J. (2000). Growing up digital: How the web changes work, education, and the ways people learn. *Change,* March/April, 10-20.

Bryman, A. (2008). *Social research methods* (3rd ed.). Oxford: Oxford University Press.

Bryman, A., & Cramer, D. (2005). *Quantitative data analysis with SPSS: A guide for social scientists*. London: Routledge.

Burns, R. (2000). *Introduction to research methods* (4th ed.). Frenchs Forest, Sydney: Pearson Education.

Campbell, J., Dunnette, M., Arvey, R., & Hellervik, L. (1973). The development and evaluation of behaviorally based rating scales. *Journal of Applied Psychology, 57*(1), 15-22.

Carlson, R., Downs, E., Clark, K., & Repman, J. (1999). Essential Web Searching Skills for Preservice Teachers. In J. Price (Ed.), *Proceedings of Society for Information Technology and Teacher Education International Conference* (pp. 1812-1814). Chesapeake, VA: AACE.

Cascio, W., & Valenzi, E. (1977). Behaviorally anchored rating scales-effects of education and job experience of raters and ratees. *Journal of Applied Psychology, 62*(3), 278-282.

Cassidy, S., & Eachus, P. (2002). Developing the Computer User Self-Efficacy (CUSE) scale: Investigating the relationship between computer self-efficacy, gender and experience with computers. *Journal of Educational Computing Research, 26*(2), 133 - 153.

Catherall, P. (2005). *Delivering e-learning for information services in higher education*. Oxford, UK: Chandos.

Cavanagh, R., Romanoski, J., Giddings, G., Harris, M., & Dellar, G. (2003). *Application of Rasch model and traditional statistics to develop a measure of primary school classroom learning culture*. Paper presented at the Annual Conference of the Australian Association for Research in Education. Retrieved December 11, 2008, from www.aare.edu.au/03pap/cav03396.pdf.

Chadha, G., & Kumail, S. (2002). *E-Learning: An expression of the knowledge economy*. New Delhi: McGraw-Hill.

Chappell, C., & Hager, P. (1994). Values and competency standards. *Journal of Further and Higher Education, 18*(3), 12-23.

Chen, W., & Looi, C. (2007). Incorporating online discussion in face to face classroom learning: A new blended learning approach. *Australasian Journal of Educational Technology, 23*(3), 307-326.

Cheurprakobkit, S., Hale, D., & Olson, J. (2002). Technicians' perceptions about web based courses: The University of Texas system experience. *American Journal of Distance Education, 16*(4), 245-258.

Chick, J. (1992). The New England Mode in theory and practice. In I. Mugrudge (Ed.), *Perspectives on Distance Education: Distance Education in Single- and Dual-Mode Universities.* (pp. 33-48). New Delhi: Commonwealth of Learning.

Christensen, L. B. (2004). *Experimental methodology* (9th ed.). Boston: Pearson.

Chou, S., & Liu, C. (2005). Learning effectiveness in a Web-based virtual learning environment: a learner control perspective. *Journal of Computer Assisted Learning*, 21, 65-76.

Chung, H., & Khan, M. (2008). Classification of unethical behaviors in the management of information systems: The use of behaviorally anchored rating scale procedures. *International Journal of Management, 25*(2), 262-269.

Chung, S., Chung, M., & Severance, C. (1999). Design of support tools and knowledge building in a virtual university course: Effect of reflection and self-explanation prompts. In P. De Bra & J. Leggett (Eds.), *Proceedings of WebNet World Conference on the WWW and Internet 1999* (pp. 237-242). Chesapeake, VA: AACE.

Clarke, A. (2004). *e-Learning skills*. Basingstoke, UK: Palgrave.

Clason, D., & Dormody, T. (1994). Analyzing data measured by individual Likert-type items. *Journal of Agricultural Education, 35*(4), 31-35.

Coates, H., James, R., & Baldwin, G. (2005). A critical examination of the effects of Learning. Management Systems on university teaching and learning. *Tertiary Education and Management, 11*, 19-36.

Cobb, P. (1994). Where is the Mind? Constructivists and Sociocultural Perspectives on Mathematical Development. *Educational Researcher, 23*(7), 13-20.

Cocanougher, A., & Ivancevich, J. (1978). 'Bars' performance rating for sales force personnel. *The Journal of Marketing, 42*(3), 87-95.

Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education* (5th ed.). London: Routledge.

Conway, P., & Ellison, M. (1995). The development of a behaviorally anchored rating scale for master's student evaluations of field instructors. *The Clinical Supervisor, 13*(1), 101-119.

Coombs, P., Prosser, R., & Ahmed, M. (1973). *New Paths to Learning: For Rural Children and Youth*. New York: International Council for Educational Development.

Cowley, S. (2004). *Getting the buggers to think*. New York: Continuum.

Crutsinger, C., Knight, D., & Kinley, T. (2005). Learning style preferences: Implications for web-based instruction. *Clothing and Textiles Research Journal*, 23(4), 266-277.

Cyrs, T. (1979). *Derivation of competence needs for training directors through consensual judgements workshop*. Chicago: The University of Chicago Human Resource Center.

Cyrs, T., Dobbert, D., & Grussing, P. (1976). *Progress report: Competency identification including evaluation and validation*. Minneapolis: College of Pharmacy, University of Minnesota.

Dabbagh, N., & Bannan-Ritland, B. (2005). *Online learning: Concepts, strategies and application*. Upper Saddle River, NJ: Pearson.

de la Teja, I., & Spannaus, T. (2008). New online technologies: New online learner competencies. Really? In J. Visser & M. Visser-Vafrey (Eds.), *Learners in a changing learning landscape* (pp. 187-211). Netherlands: Springer.

Department of Education, Science and Training (2002). *Higher Education at the crossroads: An overview paper*. Retrieved August 16, 2005, from www.backingaustraliasfuture.gov.au/publications/crossroads/default.htm

Dewar, T., & Whittington, D. (2000). Online learners and their learning strategies. *Journal of Educational Computing Research, 23*(4), 415-433.

Dick, W. (1992). An instructional designer's view of constructivism. In T. M. Duffy & D.H. Jonassen (Eds.), *Constructivism and the Technology of Instruction: A Conversation* (pp.91-98). Hillsdale, NJ: Lawrence Erlbaum.

Dickinson, T., & Tice, T. (1973). A multitrait-multimethod analysis of scales developed by retranslation. *Organizational Behavior and Human Performance, 9*, 421-438.

Dickinson, T., & Tice, T. (1977). The discriminant validity of scales developed by retranslation. *Personnel Psychology, 30*, 217-228.

Dickson, S. (2000). *A multifaceted analysis of performance criteria: Implications for the education and assessment of elite soccer officials in Australia.* Unpublished PhD Thesis, University of New England.

Dixson Library (2009). *eSKILLS UNE.* Retrieved April 26th, 2009, from http://www.une.edu.au/library/eskillsune/

Drew, C. , Hardman, M., & Weaver Hart, A. (1996). *Designing and conducting research: Inquiry into Education and Social Science* (2nd ed.). Boston: Allyn and Bacon.

Driscoll, M. (2000). *Psychology of learning for instruction* (2nd ed.). Needham Heights, Mass: Allyn & Bacon.

Duignan, P. (1982). *Developing behaviourally anchored measures of administrative effectiveness: Some problems and possibilities.* Armidale, Australia: Commonwealth Council for Educational Administration.

Dupin-Bryant, P., & DuCharme-Hansen, B. (2005). Assessing student needs in web based distance education [Electronic Version]. *Journal of Instructional Technology and Distance Learning, 2*(1). Retrieved February 25, 2007, from http://itdl.org/journal/Jan_05/article04.htm

Eastin, M., & LaRose, R. (2006). Internet self-efficacy and the psychology of the digital divide [Electronic Version]. *Journal of Computer Mediated Communication*, 6. Retrieved April 21, 2009, from http://www3.interscience.wiley.com/cgi-bin/fulltext/120837803/HTMLSTART

Edwards, P. (2003). Dimensions of students' interactive video-based distance learning experiences: A qualitative study conducted at Texas Women's University. In D. Barron(Ed.), *Benchmarks in distance education: The LIS experience* (pp. 337-358). Westport, Conn.: Libraries Unlimited.

Elliot, B. (2008). *E-Pedagogy: Does e-learning require a new approach to teaching and learning?* Retrieved October 5, 2008, from http://www.scribd.com/doc/932164/E-Pedagogy

Elliot, R., Fox, C., Beltyukova, S., Stone, G., Gunderson, J., & Zhang, X. (2006). Deconstructing therapy outcome measurement with Rasch analysis of a measure of general clinical distress: The Symptom Checklist-90-revised. *Psychological Assessment, 18*(4), 359-372.

Erffmeyer, E., & Martray, C. (1990). A quantified approach to the evaluation of teacher professional growth and development and professional leadership through goal setting. *Journal of Personnel Evlauation in Education, 3*, 275-300.

European Union (2001). *The eLearning action plan: Designing tomorrow's education.* Retrieved June 7, 2008, from http://europa.eu.int/eurlex/en/com/cnc/2001/com2001_0172en01.pdf

Felder, R. (1996). Matters of style [Electronic Version]. *ASSE Prism*, 6(4), 18-23.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). London: Sage.

Fogli, L., Hulin, C., & Blood, M. (1971). Development of first-level behavioral job criteria. *Journal of Applied Psychology, 55*(1), 3-8.

Fong, W., Senkevitch, J., & Wolfram, D. (2003). The evolution of distance learning atthe School of Information Studies, University of Wisconsin-Milwaukee. In D. Barron (Ed.), *Benchmarks in distance education: The LIS experience* (pp. 359-364). Westport, Conn. : Libraries Unlimited.

Fozdar, I., Kumar, L., & Kannan, S. (2006). A survey of a study on the reasons responsible for student dropout from the Bachelor of Science Programme at Indira Gandhi National Open University. *International Review of Research of Open and Distance Learning, 7*(3), 2-15.

Freeman, M., & Bamford, A. (2004). Student choice of anonymity for learner identity inonline learning discussion forums. *International Journal on E-Learning, 3*(3), 45-53.

Gabriel, M. (2004). Learning together: Exploring group interactions online. *Journal of Distance Education, 19*(1), 54-72.

Gagne, E. D., Walker Yekovich, C., & Yekovich, F. R. (1993). *The Cognitive Psychology of School Learning* (2nd ed.). New York: Harper Collins.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Gay, L., Mills, G., & Airasian, P. (2006). *Educational research: competencies for analysis and applications* (8th ed.). Upper Saddle River: NJ: Pearson.

Geersten, R. (2003). Rethinking thinking about higher-level thinking. *Teaching Sociology, 31*(1), 1-19.

Gillani, B. (2003). *Learning theories and the design of e-learning environments*. Lanham, Maryland: University Press of America.

Godwin, J. (2004, 14-16 July). *Evaluating academic skill programs - which way?* Paper presented at the Inaugural Pacific Rim - First Year in Higher Education Conference: Dealing with Diversity, Melbourne.

Gredler, M. E. (1997). *Learning and Instruction: Theory into Practice* (3rd ed.). New Jersey: Prentice-Hall.

Green, S., Sauser, W., Fagg, J., & Champion, C. (1981). Shortcut method for deriving behaviorally anchored rating scales. *Education and Psychological Measurement, 41*, pp 761-775.

Grussing, P., Silzer, R., & Cyrs, T. (1979). Development of behaviorally-anchored rating scales for pharmacy practice. *American Journal of Pharmaceutical Education, 43*, 115-120.

Guadagnoli, E., & Velicer, W. (1988). Relation of sample size to the stability of component patterns. *Psychological Bulletin, 103*(2), 265-275.

Gunawardena, C. (1995). Social presence theory and implications for interaction and collaborative learning in computer conferences. *International Journal of Educational Telecommunications, 1*(2/3), 147-166.

Hager, P., & Beckett, D. (1995). Philosophical underpinnings of the integrated conception of competence. *Educational, Philosophy and Theory, 27*(21), 1-24.

Hair, J., Anderson, R., Tatham, R., & Black, W. (1998). *Multivariate data analysis* (5th ed.). London: Prentice-Hall.

Harari, O., & Zedeck, S. (1973). Development of behaviorally anchored scales for the evaluation of teaching. *Journal of Applied Psychology, 58*(2), 261-265.

Healey, B. (2007). Drop downs and scroll mice: The effect of response option format and input mechanism imposed on data quality in web surveys. *Social Science Computer Review, 11*(1), 111-128.

Hedberg, J. (2001). The online and digital experience: Reassuring higher education outcomes. In L. Vandervert, L. Shavinina & R. Cornell (Eds.), *Cybereducation: The future of long-distance learning* (pp. 219-236*)*. Larchmont, NY: Liebert.

Hewson, L., & Hughes, C. (2005). Social processes and pedagogy in online learning [Electronic Version]. *AACE Journal*, 13, 99-125. Retrieved October 20, 2008, from http://www.editlib.org/index.cfm/files/paper_4805.pdf

Hill, G. (2007). Making the assessment criteria explicit through written feedback: A pedagogical approach to developing academic writing. *International Journal of Pedagogies and Learning, 3*(1), 59 - 66.

Hiltz, S. (1994). *The virtual classroom: Learning without limits via computer networks.* Norwood, NJ: Ablex.

Hoffmann, T. (1999). The meanings of competency. *Journal of European Industrial Training, 23*(6), 275-285.

Hom, P., DeNisi, A., Kinicki, A., & Bannister, B. (1982). Effectiveness of performance feedback from behaviorally anchored rating scales. *Journal of Applied Psychology, 67*(5), 568-576.

Horton, W., & Horton, K. (2003). *E-learning tools and technologies : a consumer's guide for trainers, teachers, educators, and instructional designers.* Indianapolis, Indiana: Wiley.

Hultin, J. (n.d.). *Learning management systems (LMS): A review*. Retrieved June 8, 2008, from http://se2.isn.ch/serviceengine/ FileContent?service ID=18&fileid=09FD0FDC-723F-5E63-CCDB-6AFCDA98BCC8&lng=en

Jackson, B. (1998). *Evaluation of learning technology implementation*. Retrieved April 21, 2009, from http://www.icbl.hw.ac.uk/ltdi/evalstudies/esevalimp.pdf

Jackson, R. (2004). *Defining e-learning-different shades of online*. Retrieved June 6, 2006, from http://www.knowledgeability.biz/weblearning/#Different%20Shades %20of%20Online

Jacobs, R., Kafry, D., & Zedeck, S. (1980). Expectations of behaviorally anchored rating scales. *Personnel Psychology, 33*(3), 595-639.

Jamieson, S. (2004). Likert scales: How to (ab)use them. *Medical Education, 34*, 1217-1219.

Jessup, S., & Webb, P. (1994). *Teacher perceptions of the essential skills of classroom management and discipline*. Paper presented at the Australian Association for Research in Education. Retrieved August 15, 2005, from http://www.aare.edu.au/94pap/jesss94013.txt

Jiang, M., & Ting, E. (2000). A study of factors influencing students' perceived learning in a web-based course environment. *International Journal of Educational Telecommunications, 6*(4), 317-338.

Jonassen, D., & Kwan, H. (2001). Communication patterns in computer mediated versus face-to-face group problem solving. *Educational Technology, Research and Development, 49*(1), 35-51.

Joung, S. (2005). Adaptive LMS (Learning Management Systems) design suggestions for learners with low self-regulation skills. In C. Crawford, D. Willis, R. Carlsen, I. Gibson, K. McFerrin, J. Price & R. Weber (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2005* (pp. 1424-1434). Chesapeake, VA: AACE.

Jubb, R., & Robotham, D. (1997). Competences in management development: challenging the myths. *Journal of European Industrial Training, 21*(5), 171-175.

Kang, I. (1998). The use of computer-mediated communication: Electronic collaboration and interactivity. In C. Bonk & K. King (Eds.), *Electronic collaborators: Learner-centered technologies for literacy, apprenticeship and discourse* (pp. 315-337). Mahwah, NJ: Lawrence Erlbaum.

Kang, S. (2006). *Disembodiment in online social interaction: Impact of online chat on social support and psychosocial well-being*. Paper presented at the Annual Meeting of the International Communication Association. Retrieved November 2, 2008, from http://www.allacademic.com/meta/p90067_index.html.

Kearsley, G. (2000). *Online education: Learning and teaching in cyberspace*. Belmont, CA: Wadsworth.

Kelly, G. A. (1991). *The Psychology of Personal Constructs* (Vol. 1). London: Routledge.

Kolb, D. (1984). *Experiential learning: experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.

Kolb, D. (1999). *The Kolb learning style inventory, version 3*. Boston: Hay Group.

Krause, K., Bochner, S., & Duchesne, S. (2006). *Educational psychology for learning and teaching* (2nd ed.). South Melbourne: Thompson Learning.

Kraut, R., Kiesler, S., Bonka, B., Cummings, J., Helgeson, V., & Crawford, A. (2002). Internet paradox revisited. *Journal of Social Issues, 58*(1), 49-74.

Krentler, K., & Willis-Flurry, L. (2005). Does technology enhance actual student learning? The case of online discussion boards. *Journal of Education for Business*, 8(6), 316-321.

Landy, F. (1985). *Psychology of work behavior*. Chicago: Dorsey Press.

Landy, F., Farr, J., Saal, F., & Freytag, W. (1976). Behaviorally anchored rating scales for rating the performance of police officers. *Journal of Applied Psychology, 61*(6), 750-758.

Le Compte, M., Priessle, J., & Tesch, R. (1993). *Ethnography and qualitative research design*. London: Academic Press.

Lea, M., & Street, B. (2006). The "Academic Literacies" Model: Theory and applications. *Theory into Practice, 45*(4), 368 - 377.

LeBlanc, D. (2004). *Statistics: Concepts and applications for the Sciences*. Boston, MA: Jones & Bartlett.

Lewin, K. (1935). *A Dynamic Theory of Personality*. New York: McGraw-Hill.

Linacre, J. (n.d.). Reliability and separation of measures. Retrieved October 1, 2008, from http://www.winsteps.com/winman/index.htm?reliability.htm

Lindner, J., Dooley, K., & Wingenbach, G. (2003). A cross-national study of agricultural and extension education competencies. *Journal of International Agriculture and Extension Education, 10*(1), 51-59.

Lindner, J., Dooley, K., & Murphy, T. (2001). Discrepancies in competencies between doctoral students on-campus and at a distance. *American Journal of Distance Education, 15*(2), 25-40.

Littlejohn, A., & Pegler, C. (2007). *Preparing for blended e-learning*. Oxon, UK: Routledge.

Liu, X. (2005). Impact of motivation, learning strategies and learning styles on online learning success. In C. Crawford, D. Willis, R. Carlsen, I. Gibson, K. McFerrin, J. Price & R. Weber (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2005* (pp. 477 - 480). Chesapeake, VA: AACE.

Loomis, K. (2000). Learning styles and asynchronous learning: Comparing the LASSI model to class performance. *Journal of Asynchronous Learning Networks*, 4(1), 22-32.

Lynch, M., & Roeker, J. (2007). *Project managing e-learning: a handbook for successful design, delivery and management*. Oxon, UK: Routledge.

MacCallum, R., Widaman, K., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*(1), 84-99.

MacLeod, P. (2005). A discussion of the problems of identity and of establishing communities of practice in online learning contexts. In P. Kommers & G. Richards (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2005* (pp. 2894-2899). Chesapeake, VA: AACE.

Macquarie Library (2005). *Macquarie Dictionary* (4th ed.). North Ryde, NSW: Macquarie Library.

Maiorca, J. (1997). How to construct behaviorally anchored rating scales (BARS) for employee evaluations. *Supervision, 58*(8), 15.

Martin, F., & Tutty, J. (2008). *Learning Management System self-efficacy of online and hybrid learners: Using LMSES Scale*. Paper presented at the 2008 UNC Teaching and Learning with Technology Conference Retrieved April 26, 2009, from http://conference.unctlt.org/conf2008/proceedings/2008/2008_Proceedings_8 24_LMSES_Scale.pdf

Mayer, R., Fennell, S., Farmer, L., & Campbell, J. (2004). A personalization effect in multimedia learning: students learn better when words are in conversational style rather than formal style. *Journal of Educational Psychology, 92*(2), 389-395.

Mayes, T. (2001). Learning technology and learning relationships. In J. Stephenson (Ed.), *Teaching and learning online: Pedagogies for new technologies* (pp. 16-26). London: Kogan Page.

Mayes, T., & de Freitas, S. (2007). Learning and e-Learning. In H. Beetham & R. Sharpe (Eds.), *Rethinking pedagogy for a digital age: Designing and delivering e-learning* (pp. 13 -25). Oxon, UK: Routledge.

McCombs, B., & Vakili, D. (2005). A learner-centred framework for e-learning. *Teachers College Record, 107*(8), 1582-1600.

McConnell, D. (2006). *E-Learning Groups and Communities*. Maidenhead: England: Open University Press.

McCormack, C., & Jones, D. (1998). *Building a Web-Based Education System*. New York: John Wiley & Sons.

McGregor, D. (2007). *Developing thinking; Developing learning*. Maidenhead, England: McGraw-Hill.

McInerney, D., & McInerney, V. (2006). *Educational psychology: Constructing learning* (4th ed.). Sydney: Pearson Education.

McLoughlin, C. (2002). Computer supported teamwork: An integrative approach to evaluating cooperative learning in an online environment. *Australian Journal of Educational Technology, 18*(2), 227-254.

McManus, T. (2000). Individualizing instruction in a web-based hypermedia learning environment: nonlinearity, advance organizers, and self-regulated learners. *Journal of Interactive Learning Research, 11*(2), 219-251.

Merriam, S. B., & Caffarella, R. S. (1991). *Learning in Adulthood: a Comprehensive Guide*. San Francisco: Jossey Bass.

Mitchell, M., & Jolley, J. (1996). *Research design explained* (3rd ed.). Fort Worth: Harcourt Brace.

Mokhtar, I., Majid, S., & Foo, S. (2008). Teaching information literacy through learning styles: The application of Gardner's multiple intelligences. *Journal of Librarianship and Information Science*, 40(2), 93-109.

Moore, D., & Webb, P. (1995). *Roles and competencies required by primary teachers in teaching personal development, health and physical education*. Paper presented at the Australian Association for Research in Education. Retrieved September 21, 2005. from http://www.aare.edu.au/95pap/webbp95036.txt

Moore, D., Webb, P., & Dickson, S. (1997). Perceptions of preservice primary teachers in teaching personal development, health and physical education In J. Walkulski, S. Wright & S. Tan Kwang San (Eds.), *AIISEP World Conference on Teaching, Coaching and Fitness Needs in Physical Education and the Sports Sciences* (pp. 144-152). Nanyang Technological University, Singapore.

Motowidlo, S., & Borman, W. (1977). Behaviorally anchored scales for measuring morale in military units. *Journal of Applied Psychology, 62*(2), 177-183.

Muldoon, R., & Godwin, J. (2002). *The Faculty Mentor Program in the Sciences: An innovative approach to supporting student learning.* Paper presented at the Proceedings of the Seventh Pacific Rim First Year in Higher Education Conference: Enhancing Transition to Higher Education - Strategies and Policies that Work. Retrieved April 26, 2009, from www.fyhe.qut.edu.au/past_papers/papers03/Refereed%20Papers/Student%20Pop.%20&%20Div/Godwin&Muldoon_ab.doc

Mungania, P., & Reio, T. (2005, 24 - 27 February). *If e-learners get there, will they stay? The role of e-learning self-efficacy.* Paper presented at the Academy of Human Resource Development International Conference (AHRD), Estes Park, CO.

Neuman, W. (2006). *Social research methods: Qualitiative and quantitative approaches* (6th ed.). Boston, MA: Pearson Education.

New Zealand Ministry of Education (2006). *Enabling the 21st Century learner: An e-Learning action plan for schools 2006–2010.* Retrieved March 25, 2008, from www.digitalstrategy.govt.nz/upload/Main%20Sections/Confidence/Capability/itcstrategy.pdf

Norton, M. (2003). The University of Southern Mississippi School of Library and Information Sciences distance education history and programs. In D. Barron (Ed.), *Benchmarks in distance education: The LIS experience* (pp. 299-311). Westport, Conn. :Libraries Unlimited.

OECD (2005). E-learning in Tertiary Education. Retrieved June 9, 2008, from http://www.oecd.org/dataoecd/55/25/35961132.pdf

Oh, C. (2003). Information Communication Technology and the new university: A view on eLearning. *Annals of the American Academy of Political and Social Science,* 585, 134-153.

Oliver, R., & McLoughlin, C. (1999). Curriculum and learning-resources issues arising from the use of web-based support systems. *International Journal of Learning Technology, 5*(4), 419-436.

Organisational Development (2007). *International computing drivers licence.* Retrieved April 26, 2009, from http://www.une.edu.au/od/icdl.php

Ormrod, J. (1990). *Human Learning: Principles, theories and Educational Applications.* New York: Merrill.

Pai, Y. (1973). *Teaching, Learning and the Mind.* Boston: Houghton-Mifflin.

Pallof, R., & Pratt, K. (1999). *Building learning communities in cyberspace: Effective strategies for the online classroom.* San Francisco: Jossey-Bass.

Pallof, R., & Pratt, K. (2003). *The virtual student: A profile guide to working with online learners*. San Francisco: Jossey-Bass.

Panko, R. (1988). *End user computing: Management applications and technology*. New York: Wiley.

Parnell, J. (2003). The management education by Internet readiness (Mebir) scale: Developing a scale to assess personal readiness for Internet-mediated management education. *Journal of Management Education*, 27(4), 431-436.

Parry, S. (1998). Just what is a competency (and why should you care?). *Training, 35*(6), 58-64.

Pecora, P. J., & Hunter, J. (1988). Performance appraisal in child welfare: Comparing the MBO and BARS methods. *Administration in Social Work*, 12(1), 55-72.

Phillips, D. (1995). The good, the bad, and the ugly: The many faces of constructivism. *Educational Researcher, 24*(7), 5-12.

Pirila, K., & Yli-Luoma, P. (2007). Learning outcomes, interaction and motivation in elearning. In G. Richards (Ed.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2007* (pp. 6460-6467). Chesapeake, VA:AACE.

Planning and Institutional Research (2006). *Facts and Figures*. Retrieved September 27, 2006, from http://planning.une.edu.au/Statistics/overview/index.htm

Polk Community College (n.d.). *The successful distance education student*. Retrieved September 8, 2006, from http://www.polk.edu/instruct/success

Polya, G. (1957). *How to solve it: A new aspect of mathematical method* (2nd ed.). Garden City, NY: Double Day.

Poole, J. (2006). E-learning and learning styles: students' reactions to web-based language and style at Blackpool and the Fylde College. *Language and Literature*, 15, 307-320.

Pounder, J. (2000). A behaviorally anchored rating scales approach to institutional self-assessment in higher education. *Assessment and Evaluation in Higher Education, 25*(2), 171-182.

Priest, G. (2000). e-Learning and educational transformation: an interview with Greg Priest [Electronic Version]. *The Technology Source Archives*. Retrieved February 25, 2007, from http://technologysource.org/article/elearning_and_educational_transformation/

Pritchard, A. (2004). *Learning on the Net*. London: David Fulton.

Ramus, C., & Steger, U. (2000). The roles of supervisory support behaviors and environment policy in employee "ecoinitiatives" at leading-edge European companies. *Academy of Management Journal, 47*(4), 605-626.

Ravert, R., & Evans, M. (2007). College student preferences for absolute knowledge and perspective in instruction: Implications for traditional and online learning environments. *The Quarterly Review of Distance Education, 8*(4), 321-328.

Richardson, V. (1997). Constructivist teaching and teacher education: Theory and practice. In V. Richardson (Ed.), *Constructivist teacher education: building new understandings* (pp. 3-14): London.

Roblyer, M. (2002). *Integrating educational technology into teaching* (3rd ed.). Upper Saddle River, N.J.: Pearson Education.

Rogers, A. (2002). *Teaching Adults* (3rd ed.). Buckingham: Open University Press.

Rosenberg, M. (2001). *E-learning: strategies for delivering knowledge in the information age*. New York: McGraw-Hill.

Salmon, G. (2000). *E-moderating : the key to teaching and learning online*. London: Kogan Page.

Salmon, G. (2002). *E-tivities: The key to active online learning*. London: Kogan-Page.

Schellens, T., Van Keer, H., & Valcke, M. (2005). The impact of role assignment on knowledge construction in asynchronous discussion groups: A multilevel analysis. *Small Group Research*, 36, 704-735.

Schneier, C., & Beatty, R. (1979). Developing Behaviorally-Anchored Rating Scales (BARS). *The Personnel Administrator, 24(8)*, 59-68.

Schrum, L., & Hong, S. (2002). Dimensions and strategies for online success: Voices from experienced educators. *Journal of Asynchronous Learning Networks, 6*(1), 57-67.

Schwab, D., Heneman, H., & DeCotiis, T. (1975). Behaviorally anchored rating scales: A review of the literature. *Personnel Psychology, 28*, 549-562.

Seavey, C. (2003). Distance education at the School of Information Resources and Library Sciences, University of Arizona. In D. Barron (Ed.), *Benchmarks in distance education: The LIS experience* (pp. 5 - 12). Westport, Conn.: Libraries Unlimited.

Sessums, C. (2006). *Revisioning the LMS: an examination of formal learning management systems and component-based learning environments*. Retrieved June 9, 2008, from http://eduspaces.net/csessums/weblog/11712.html

Shea, P., Fredericksen, E., Pickett, A., Pelz, W., & Swan, K. (2001). *Measures of learning effectiveness in the SUNY Learning Network*. Retrieved November 1, 2008, from http://tlt.suny.edu/originaldocumentation/library/researchsln/ALNWorkshop2000.pdf

Siemens, G. (2004a). *Categories of e-learning*. Retrieved June 6, 2006, from http://www.elearnspace.org/Articles/elearningcategories.htm

Siemens, G. (2004b). *Connectivism: A learning theory for the digital age.* Retrieved August 25, 2005, from http://www.elearnspace.org/Articles/connectivism.htm

Siemens, G. (2006). *Learning or management system? A review of learning management system reviews* [Electronic Version]. Retrieved October 12, 2007, from ltc.umanitoba.ca/wordpress/wp-content/uploads/2006/10/learning-ormanagement-system-with-reference-list.doc.

Sims, R., Dobbs, G., & Hand, T. (2002). Enhancing quality in online learning: Scaffolding planning and design through proactive evaluation. *Distance Education, 23*(2), 135-147.

Skinner, B. F. (1968). *The Technology of Teaching*. Englewood Cliffs, NJ: Prentice-Hall.

Slavin, R. E. (1991). *Educational Psychology* (3rd ed.). New Jersey: Prentice-Hall.

Sloman, M. (2001). *The e-learning revolution: From propositions to reality*. London: CIPD.

Smedley, A. (2007). The self-directed learning readiness of first year bachelor of nursing students. *Journal of Research in Nursing, 12*(4), 373-385.

Smith, P., & Kendall, L. (1963). Retranslation of expectations: An approach to the construction of unambiguous anchors for ratings scales. *Journal of Applied Psychology*, 47(2), 149-155.

Staples, W., & Locander, W. (1977). Behaviorally Anchored Scales-A new tool for retail management evaluation and control. *Journal of Retailing, 52*(4), 39.

Stephenson, J. (2001). Learner managed learning-an emerging pedagogy for learning online. In J. Stephenson (Ed.), *Teaching and learning online: Pedagogies for new technologies*. London: Kogan Page.

Stevens, J. (2002). *Applied multivariate statistics for the social sciences* (4th ed.). Mahwah, NJ: Lawrence Erlbaum.

Stevens, K., & Jamieson, R. (2002). The Introduction and Assessment of Three Teaching Tools (WebCT, Mindtrail, EVE) into a Post Graduate Course. *Journal of Information Technology Education, 1*(4), 233-252.

Stoskohf, C., Glik, D., Baker, S., Ciesla, J., & Cover, C. (1992). The reliability and construct validity of a behaviorally anchored rating scale used to measure nursing assistant performance. *Evaluation Review, 16*(3), 333-345.

Strebler, M., Robinson, D., & Heron, P. (1997). *Getting the best out of your competencies*. Brighton: Institute of Employment Studies, University of Sussex.

Tallent-Runnels, M., Thomas, J., Lan, W., Cooper, C., Ahern, T., Shaw, S. (2006). Teaching courses online: A review of the research. *Review of Educational Research, 76*(1), 93-135.

Teaching and Learning Centre (2001). *Principles of online teaching at UNE.* Retrieved June 16, 2005, from www.une.edu.au/secretariat/Academic-Board/online-teaching.rtf

Teaching and Learning Centre (2007). *TLC - ADU academic workshops*. Retrieved April 26, 2009, from http://tlcfmserv.une.edu.au/workshops/index.php?area=workshop_display&show=all

TESEP (2007). *Re-thinking learning technology*. Retrieved September 28, 2008, from http://www2.napier.ac.uk/transform/Rethinking_Learning_Technology.pdf

Thompson, M. (2007). From distance education to e-learning. In R. Andrews & C. Haythornthwaite. (Eds.), *The SAGE Handbook of e-learning research* (pp 159-178). London: SAGE.

Tolmie, A., & Boyle, J. (2000). Factors influencing the success of computer mediated communication (CMC) environments in university teaching: A review and case study. *Computers & Education*, 34, 119-140.

Tu, C. (2002). The measurement of social presence in an online learning environment. *International Journal on E-Learning, 1*(2), 34-45.

Tu, C., & McIsaac, M. (2002). The relationship of social presence and interaction in online classes. *The American Journal of Distance Education, 16*(3), 131-150.

UK Department of Education and Skills (2003). Towards a unified e-learning strategy: Consultation document. Retrieved March 25, 2008, from http://www.dfes.gov.uk/consultations/conResults.cfm?consultationId=774

Valkenburg, P., Schouten, A., & Peter, J. (2005). Adolescents' identity experiments on the Internet. *New Media & Society, 7*(3), 393-402.

van der Meer, J., & Scott, C. (2008). Shifting the balance in first-year learning support: from staff instruction to peer-learning primacy. *Australasian Journal of Peer Learning, 1*(1), 70-79.

Vander Zanden, J. W. (1980). *Educational Psychology*. New York: Random House.

Vergidis, D., & Panagiotakopoulos, C. (2002). Student dropout in the Hellenic Open University: Evaluation of the graduate program: Studies in Education. *International Review of Research in Open and Distance Learning, 3*(2), 1-15.

von Glaserfeld, E. (1987). Learning as a Constructive Activity. In C. Janvier (Ed.), *Problems of Representation in the Teaching and Learning of Mathematics* (pp. 3-17). Hillsdale, NJ: Lawrence Erlbaum.

Vrasidas, C. (2000). Constructivism versus objectivism: implications for interaction, course design, and evaluation in distance education. *International Journal of Educational Telecommunications, 6*(4), 339-362.

Vygotsky, L. (1978). *Mind in Society* (M. Cole, Trans.). Cambridge, MA: Harvard University Press.

Wang, A., & Newlin, M. (2000). Characteristics of students who enroll and succeed in Psychology web-based classes. *Journal of Educational Psychology*, 92(1), 137-143.

Waterhouse, S. A. (2005). *The power of elearning: the essential guide for teaching in the digital age*. Boston: Allyn & Bacon.

Watson, J. (1913). Psychology as the behaviourist views it. *Psychological Review, 20*, 158-177.

Webb, P., Jessup, S., Moore, D., & Landy, R. (1994). *The use of behaviourally anchored rating scales to determine effective performance in sport and physical education research*. Paper presented at the Australian Association for Research in Education Conference. Retrieved August 15, 2005, from http://www.aare.edu.au/94pap/webbp94037.txt

Weiner, B. (1972). Attribution theory, achievement and motivation, and the educational process. *Review of Educational Research, 42*(2), 203-215.

Weiss, D. (2001). FileMaker gets new look: OS X-savvy database app learns new tricks [Electronic Version]. *Macworld*. Retrieved September 27, 2006, from http://www.macworld.com/2001/05/bc/14filemaker/.

Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge, UK: Cambridge University Press.

Yang, Y. (2002). Instructional strategies for web-based bulletin boards to stimulate interaction and improve student learning performance in distance education. In P. Barker & S. Rebelsky (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2002 (pp.* 2105-2106). Chesapeake, VA: AACE.

Yim, H., Abd-El-Fattah, S., & Lee, L. (2007). A Rasch analysis of the Teacher Music Confidence Scale. *International Education Journal, 8*(2), 260-269.

Yuen, H., & Chow, Y. (2000). Social-Constructivist approach. In N. Law, H. K. Yuen, W. W. Ki, S. C. Li, Y. Lee & Y. Chow (Eds.), *Changing Classroom and Changing Schools: Study of Good Practices in Using ICT in Hong Kong Schools* (pp. 103 - 113). Hong Kong Centre for Information Technology in School and Teacher Education, The University of Hong Kong.

Zedeck, S., & Baker, H. (1972). Nursing performance as measured by behavioral expectations scales: A multitrait-multirater analysis. *Organizational Behavior and Human Performance, 7*, 457-466.

APPENDICES

Appendix 1 – Ethics Documentation for Phase One of the Study

Dear Dr C Reading and M Parkes

HREC has given approval for the following.

Identification of the competencies Required to be an Effective E-Learner

Your HREC approval number is: HE05/191 valid to 22/09/2006

The Human Research Ethics Committee may grant approval for up to a maximum of three years.

For approval periods greater than 12 months, researchers are required to submit an application for renewal at each twelve-month period. All researchers are required to submit a Final Report at the completion of their project. The Renewal/Final Report

Form is available at the following web address:

http://rs-nt-10.une.edu.au/Home/V_2_1/ecforms.html

The NHMRC National Statement on Ethical Conduct in Research Involving Humans requires that researchers must report immediately to the Human Research Ethics Committee anything that might affect ethical acceptance of the protocol. This includes adverse reactions of participants, proposed changes in the protocol, and any other unforeseen events that might affect the continued ethical acceptability of the project.

In issuing this approval number, it is required that all data and consent forms are stored in a secure location for a minimum period of five years. These documents may be required for compliance audit processes during that time. If the location at which data and documentation are retained is changed within that five year period, the Research Ethics Officer should be advised of the new location.

Best Wishes,

Belinda

~~~~~~~~~~~~~~~~~~~~~~~~~

Belinda Ackling
Acting Research Ethics Officer
Researcher Services
University of New England
Armidale NSW 2351
Ph: 02 6773 3449
Fax:02 6773 3543
Email: Ethics@une.edu.au

Appendix 2 – Explanatory Letter and Information Sheet for Participants

Dear <Participant.name>,

Thank you for your interest in participating in a workshop to identify the competencies required to be an effective e-learner. This workshop is related to my doctoral research and your participation is sought because of your expertise and experience in the area of e-learning. I have attached a Participant Information Sheet to provide you with further details about this project. A Participant Consent Form is also attached to allow you to indicate your willingness to be a participant in this project. May I stress you are free to stop participating in this project at any time.

While there is little doubt that e-learning will have a large impact on the way universities deliver education to their students, much of the technology is still relatively new and little understood. Furthermore, there is scant detail about the pedagogy surrounding e-learning. This is particularly the case in regard to the competencies students need to learn effectively in these new learning environments. Hence there is the real need for research in this area.

Although e-learning is a broad term, I have restricted my study to Tertiary level distance education students who are learning online though delivery platforms such as WebCT. Your experience in this area and e-leaning in general, will be invaluable in helping me identify the competencies required to be effective in such learning environments.

Upon completion of this study, it is hoped that data gathered will be used to assist in a number of areas:

•	the identification of educational "best practice" in the area of e-learning;
•	the development of training programs to help improve the effectiveness of e-learners;
•	the provision of performance feedback through helping learners identify the skills necessary to be effective e-learners; and
•	the application of this knowledge to better inform educational developers allowing them to build into course materials elements that could help support e-learners.

Again, may I thank you for your interest in participating and I ask that you read the enclosed Participant Information Sheet and if you feel you would like to be part of this project could your please provide your consent by emailing me at:
mparkes2@une.edu.au

Yours Sincerely

Mitchell Parkes
Lecturer ICT Education
School of Education
University of New England,
Armidale, 2351.

Appendix 2 – Continued

	School of Education

Armidale, NSW 2351 Australia

Telephone [Int'l + 61 2] (02)6773 4221 / 6773 2560

Participant Information Sheet

Please retain this information sheet for your records.

Project Title: *Identification of the Competencies Required to be an Effective E-Learner*

Project Aims: To identify the knowledge, skills and attitudes considered necessary for effective learning within e-learning (online) environments.

Contact Details:

Dr Chris Reading (Principal Supervisor)	Mitchell Parkes (PhD Student)
Lecturer ICT Education	Lecturer ICT Education
School of Education, University of New England, Armidale, Australia	School of Education, University of New England, Armidale, Australia
02 6773 5060	02 6773 5082
creading@une.edu.au	mparkes2@une.edu.au

Important Information for Participants

- Please note that you are free to end your participation in this project at any time. There are no foreseeable risks to your well being through being a participant in this workshop.

- As part of this study you will be asked to participate in a workshop as part of a panel to identify competencies considered necessary to be an effective e-learner. This panel process will be no longer than one working day in duration. Appropriate breaks and refreshments will be provided.

- It is hoped that you will find this workshop rewarding from both a professional and personal viewpoint. Unfortunately remuneration is unable to be provided for your participation.

Appendix 2 – Continued

- Each panel will consist of between 8 participants and based upon your knowledge and experience in e-learning you will work with your colleagues to identify those competencies (knowledge, skills and abilities) that you as a group consider necessary in order to be an effective e-learner.

- There will be two panels in operation for this study however you will only need to participate in *one* of these panels. The operation of these panels will be identical.

- After these panel sessions, and once the results have been collated by the researcher, you will be sent via e-mail a list of the competencies for your review, comment and approval. This process should take approximately 1 hour.

- It is intended that the panel sessions will be audio taped. If you do not wish to be taped please inform the researcher and taping will not occur. Taping is to help the researcher recall and clarify the processes undertaken by panel members in their deliberations.

- At no time will be you identified by name in the subsequent write-up of this project. You will either be referred to under the collective title of "the panel" or individually as "a member of the panel". Your status within the e-learning community may be mentioned but only through titles such as "lecturer", "educational developer" etc.

- Any recording and subsequent transcript of your panel's deliberations will be kept in a locked cabinet in my office and then destroyed after 5 years.

- The identification of e-learner competencies is part of my doctoral research. Once these competencies have been identified they will form part of a questionnaire to other members of the e-learner community to seek their feedback and further validation.

- The results of this study are likely to be available towards the end of 2006. I would be more than happy to inform you of the results if you wish me to do so. Please contact me via the address provided.

- If you have any further questions regarding any facet of this project please do not hesitate to contact me on 02 6773 5082 or mparkes2@une.edu.au

This project has been approved by the Human Research Ethics Committee of the University of New England (Approval No HE05/191 Valid to 22/09/2006)

Should you have any complaints concerning the manner in which this research is conducted, please contact the Research Ethics Officer at the following address:

Research Services
University of New England
Armidale, NSW 2351.
Telephone: (02) 6773 3449 Facsimile (02) 6773 3543
Email: Ethics@pobox.une.edu.au

Appendix 2 – Continued

Participant Consent Form

Project Title: *Identification of the Competencies Required to be an Effective E-Learner*

Project Aims: To identify the knowledge, skills and attitudes considered necessary for effective learning within e-learning (online) environments.

Contact Details:

Dr Chris Reading (Principal Supervisor)	Mitchell Parkes (PhD Student)
Lecturer ICT Education	Lecturer ICT Education
School of Education, University of New England, Armidale, Australia	School of Education, University of New England, Armidale, Australia
02 6773 5060	02 6773 5082
creading@une.edu.au	mparkes2@une.edu.au

To confirm that you wish to be a participant in the panel workshop please send an e-mail acknowledging as such to:

mparkes@une.edu.au.

Your sending of this e-mail will be taken as confirmation of the following:

I (the participant) have read the information contained in the Information Sheet for Participants and any questions I have asked have been answered to my satisfaction. I agree to participate in the panel workshop, realising that I may withdraw at any time. I understand that research data gathered for the study will be published initially as a PhD thesis and give my consent for it to be used in this thesis and subsequent publications, provided my name is not used.

I also give my consent for the proceedings of the workshop to be recorded understanding that at no point will I be identified other than as "a member of the panel" or my status within the e-learning community (for example: "an educational developer", "a lecturer")

Thank you

Mitchell Parkes
Lecturer ICT Education
School of Education,
University of New England, Armidale, 2351

Appendix 3 – Documentation for Expert Panel Workshops

i. Workshop Information Sheet

	School of Education
	Armidale, NSW 2351 Australia
	Telephone [Int'l + 61 2] (02)6773 4221/6773 2560

31st October, 2005

Dear Colleague,

Thank you for participating in today's workshop. The purpose of this workshop is to identify the *essential* competencies required to be an effective e-learner. The competencies that you identify will be used to develop a questionnaire that will be administered to both students and practitioners in the field of e-learning. Respondents of this survey will be asked to rate these competencies as follows:

1. How essential each competency is towards being an effective e-learner;

2. The level of difficulty of each competency; and

3. The level of preparedness of current e-learners with regard to these competencies.

Programme for the Workshop Session

9:00 am   Welcome Session: Introduction and definition of key terms

9:30 am   Session One: Development of performance dimensions for e-learning

10:15 am   Session Two: Identification of action words/phrases describing an effective e-learner

10:45 am   Morning Tea break

11:15 am   Session Three: Combination of action words and phrases

11.45 am   Session Four: Development of competencies from action words and phrases

12:30 pm   Lunch break

1:00 pm   Session Five: Continued development of competencies from action words and phrases

1:45 pm   Session Six: Final review and concluding comments

2:00 pm   Workshop ends

Definitions

The following definitions are provided for clarification purposes and should be referred to over the course of the workshop

e-learning   The delivery and administration of learning opportunities and support via web-based technology. For the purpose of this study, the context will be university students using learning management systems such as WebCT. Essentially, learning mediated by a Learning Management System.

Performance	The set of behaviours required to fulfil a particular task or role.
Competency	observable or measurable clusters of related knowledge, understandings, skills, attitudes and behaviours considered necessary for effective performance in an e-learning environment.
Performance Dimension	cluster of competencies, which together defined general qualities or characteristics of the role in question.

Example of a Performance Dimension[1]

An example of a Performance Dimension and its associated competencies is:

Performance Dimension: **Caters for a range of learning styles and abilities.**

1. Selects learning experiences to suit the stages of development of children.
2. Designs lessons to suit the needs of different students.
3. Utilises routines for students who need independent/extension activities.

Example of Action Words, Action Phrases and Associated Competencies[2]

Action words: stimulate, question, feedback

Action phrases: stimulate thinking, provide feedback

Competencies: Use questioning skills to stimulate thinking.

Provide feedback to peers and parents about progress of children.

Participants in this workshop have been drawn from a broad cross section of the e-learning community. In order to get the most accurate view of e-learners possible, your contribution throughout all phases of the day is encouraged. Although disagreement and negotiation are inherent in this panel process it is expected that consensus will be reached by the end of the workshop.

Finally, may I offer my sincere thanks for your decision to be part of this process. I hope it will be as rewarding and fruitful for you as it will be for me.

Kind Regards

Mitchell Parkes

---

[1] Adapted from: Jessup, S. & Webb, P. 1994, *Teacher Perceptions of the Essential Skills of Classroom Management and Discipline*, Paper presented at the Australian Association for Research in Education.1994 Conference, Newcastle

[2] Adapted from: Jessup, S. & Webb, P. 1994, *Teacher Perceptions of the Essential Skills of Classroom Management and Discipline*, Paper presented at the Australian Association for Research in Education.1994 Conference, Newcastle

Appendix 3 – Continued

ii. Workshop Handout – Learning Management System Tools

Elements of E-learning ~ Learning Management Systems

- Asynchronous communication tools (bulletin boards)
- Calendar
- Course announcement pages
- Downloading files
- Electronic assignment submission
- Electronic grade books
- E-mail
- Image and resource archives
- Interactive learning tools
- Online exams, quizzes and surveys
- Self evaluation tools
- Student presentation
- Synchronous communication tools (chat)
- Visualisation tools.
- Web based publishing tools
- Web browsers
- Web links
- Whiteboard

Appendix 3 – Continued

iii. Workshop Handout – Social Constructivist Learning Principles

TABLE 2.3
Social Constructivistic Teaching Practices and Principles

1. *Mind:* The mind is located in the social interaction setting and emerges from acculturation into an established community of practice.
2. *Authentic Problems:* Learning environments should reflect real-world complexities. Allow students to explore specializations and solve real-world problems as they develop clearer interests and deeper knowledge and skills.
3. *Team Choice and Common Interests:* Build not just on individual student prior knowledge, but on common interests and experiences. Make group learning activities relevant, meaningful, and both process and product oriented. Give students and student teams choice in learning activities. Foster student and group autonomy, initiative, leadership, and active learning.
4. *Social Dialogue and Elaboration:* Use activities with multiple solutions, novelty, uncertainty, and personal interest to promote student–student and student–teacher dialogue, idea sharing, and articulation of views. Seek student elaboration on and justification of their responses with discussion, interactive questioning, and group presentations.
5. *Group Processing and Reflection:* Encourage team as well as individual reflection and group processing on experiences.
6. *Teacher Explanations, Support, and Demonstrations:* Demonstrate problem steps and provide hints, prompts, and cues for successful problem completion. Provide explanations, elaborations, and clarifications where requested.
7. *Multiple Viewpoints:* Foster explanations, examples, and multiple ways of understanding a problem or difficult material. Build in a broad community of audiences beyond the instructor.
8. *Collaboration and Negotiation:* Foster student collaboration and negotiation of meaning, consensus building, joint proposals, prosocial behaviors, conflict resolution, and general social interaction.
9. *Learning Communities:* Create a classroom ethos or atmosphere wherein there is joint responsibility for learning, students are experts and have learning ownership, meaning is negotiated, and participation structures are understood and ritualized. Technology and other resource explorations might be used to facilitate idea generation and knowledge building within this community of peers. Interdisciplinary problem-based learning and thematic instruction is incorporated wherever possible.
10. *Assessment:* Focus of assessment is on team as well as individual participation in socially organized practices and interactions. Educational standards are socially negotiated. Embed assessment in authentic, real-world tasks and problems with challenges and options. Focus on collaboration, group processing, teamwork, and sharing of findings. Assessment is continual, less formal, subjective, collaborative, and cumulative.

Note. From Bonk et al. (1995), A. L. Brown et al. (1993), Duffy and Cunningham (1996), nest (1995), Savery and Duffy (1996), Wells and Chang-Wells (1992).

(Bonk &Cunningham, 1998, p. 34).

Appendix 4 – Ethics Documentation for Phase Two of the study

Dear Dr C Reading, Dr S Stein and Mr M Parkes

HREC has given approval for the following.

Identification of the Competencies Required to be an Effective E-Learner

Your HREC approval number is: HE06/018 valid to 15/03/07

The Human Research Ethics Committee may grant approval for up to a maximum of three years.

For approval periods greater than 12 months, researchers are required to submit an application for renewal at each twelve-month period. All researchers are required to submit a Final Report at the completion of their project. The Renewal/Final Report Form is available at the following web

address: http://rs-nt-10.une.edu.au/Home/V_2_1/ecforms.html

The NHMRC National Statement on Ethical Conduct in Research Involving Humans requires that researchers must report immediately to the Human Research Ethics Committee anything that might affect ethical acceptance of the protocol. This includes adverse reactions of participants, proposed changes in the protocol, and any other unforeseen events that might affect the continued ethical acceptability of the project.

In issuing this approval number, it is required that all data and consent forms are stored in a secure location for a minimum period of five years.

These documents may be required for compliance audit processes during that time. If the location at which data and documentation are retained is changed within that five year period, the Research Ethics Officer should be advised of the new location.

Best Wishes,

Belinda

~~~~~~~~~~~~~~~~~~~~~~~~~

Belinda Ackling

Acting Research Ethics Officer
Researcher Services
University of New England
Armidale NSW 2351
Ph: 02 6773 3449
Fax:02 6773 3543
Email: Ethics@une.edu.au

Appendix 5 – Student Participant Information Sheet

UNE THE UNIVERSITY OF NEW ENGLAND	**School of Education** Armidale, NSW 2351 Australia Telephone [Int'l + 61 2] (02)6773 4221 / 6773 2560

Student Survey

Dear Student,

Thank you for your interest in participating in this online survey exploring the competencies required to be an effective e-learner. This survey is related to my doctoral research and your participation is sought because you are currently enrolled in a fully online unit. As a consequence, you have a very special insight into the skills required to be a successful learner online. I have attached a *Participant Information Sheet* to provide you with further details about this project. A Participant Consent Form is also attached to allow you to indicate your willingness to be a participant in this project. May I stress you are free to stop participating in this project at any time.

During an earlier phase of this project, two panels of participants drawn from a cross-section of the e-learning community were asked to identify that competencies that believed were essential to be an effective e-learner. From these panel sessions a list of draft competencies was developed.

The purpose of this online survey is to externally validate this list of draft competencies. To achieve this, for each of the draft competencies you will be ask to rate on a Likert Scale across three dimensions:

Importance: how essential is the competency for effective performance as an e-learner;

Difficulty: the relative level of difficulty you perceive this competency to be;

Preparedness: how prepared you perceive you currently are in demonstrating this competency.

May I thank you for your interest in participating and I ask that you read the enclosed *Participant Information Sheet* and if you feel you would like to be part of this project could your please provide your consent by emailing me at: mparkes2@une.edu.au

Yours Sincerely

Mitchell Parkes

Lecturer ICT Education
School of Education
University of New England,
Armidale, 2351

Appendix 5 – Continued

Participant Information Sheet

Please retain this information sheet for your records.

Project Title: *Identification of the Competencies Required to be an Effective E-Learner*

Project Aims: To identify the knowledge, skills and attitudes considered necessary for effective learning within e-learning (online) environments.

Contact Details:

Dr Chris Reading (Principal Supervisor)	Mitchell Parkes (PhD Student)
Lecturer ICT Education	Lecturer ICT Education
School of Education, University of New England, Armidale, Australia	School of Education, University of New England, Armidale, Australia
02 6773 5060	02 6773 5082
creading@une.edu.au	mparkes2@une.edu.au

Important Information for Participants

- Please note that you are free to end your participation in this project at any time. There are no foreseeable risks to your well being through being a participant in this survey.

- As part of this study you will be asked to complete an online survey which will validate a draft list of competencies developed in an earlier phase of this study. This survey should take less than one hour to complete.

- You will also be asked to provide some demographic information. This is not so you may be identified in this study but rather to help identify trends in the data according to variables such as online teaching experience, background etc.

- At no time will be you identified by name in the subsequent write-up of this project. Your status within the e-learning community may be mentioned but only through titles such as "lecturer", "educational developer" etc.

- Data collected as the result of this online survey will be kept in a locked cabinet in my office and then destroyed after 5 years.

- The results of this study are likely to be available towards the end of 2006. I would be more than happy to inform you of the results if you wish me to do so. Please contact me via the address provided.

- If you have any further questions regarding any facet of this project please do not hesitate to contact me on 02 6773 5082 or mparkes2@une.edu.au

Appendix 5 – Continued

This project has been approved by the Human Research Ethics Committee of the University of New England (Approval No HE06/018 Valid to 15/03/2007)

Should you have any complaints concerning the manner in which this research is conducted, please contact the Research Ethics Officer at the following address:

Research Services
University of New England
Armidale, NSW 2351.
Telephone: (02) 6773 3449 Facsimile (02) 6773 3543
Email: Ethics@pobox.une.edu.au

Appendix 6 – Staff Participant Information Sheet

UNE THE UNIVERSITY OF NEW ENGLAND	School of Education
	Armidale, NSW 2351 Australia
	Telephone [Int'l + 61 2] (02)6773 4221 / 6773 2560

Professional Community Survey

Dear Colleague,

Thank you for your interest in participating in an online survey exploring the competencies required to be an effective e-learner. This survey is related to my doctoral research and your participation is sought because of your expertise and experience in the area of e-learning. I have attached a *Participant Information Sheet* to provide you with further details about this project. *A Participant Consent Form* is also attached to allow you to indicate your willingness to be a participant in this project. May I stress you are free to stop participating in this project at any time.

During an earlier phase of this project, two panels of participants drawn from a cross-section of the e-learning community were asked to identify that competencies that believed were essential to be an effective e-learner. From these panel sessions a list of draft competencies was developed.

The purpose of this online survey is to externally validate this list of draft competencies. To achieve this, for each of the draft competencies you will be ask to rate on a Likert Scale across three dimensions:

Importance: how essential is the competency for effective performance as an e-learner;

Difficulty: the relative level of difficulty you perceive this competency to be;

Preparedness: how prepared you perceive learners to be in demonstrating this competency.

Although e-learning is a broad term, I have restricted my study to Tertiary level distance education students who are learning online though delivery platforms such as WebCT. Your experience in this area and e-leaning in general, will be invaluable in helping me validate the competencies required to be effective in such learning environments.

May I thank you for your interest in participating and I ask that you read the enclosed *Participant Information Sheet* and if you feel you would like to be part of this project could your please provide your consent by emailing me at: mparkes2@une.edu.au

Yours Sincerely

Mitchell Parkes

Lecturer ICT Education
School of Education
University of New England,
Armidale, 2351

Appendix 6 – Continued

Participant Information Sheet

Please retain this information sheet for your records.

Project Title: *Identification of the Competencies Required to be an Effective E-Learner*

Project Aims: To identify the knowledge, skills and attitudes considered necessary for effective learning within e-learning (online) environments.

Contact Details:

Dr Chris Reading (Principal Supervisor)	Mitchell Parkes (PhD Student)
Lecturer ICT Education	Lecturer ICT Education
School of Education, University of New England, Armidale, Australia	School of Education, University of New England, Armidale, Australia
02 6773 5060	02 6773 5082
creading@une.edu.au	mparkes2@une.edu.au

Important Information for Participants

- Please note that you are free to end your participation in this project at any time. There are no foreseeable risks to your well being through being a participant in this survey.

- As part of this study you will be asked to complete an online survey which will validate a draft list of competencies developed in an earlier phase of this study. This survey should take less than one hour to complete.

- You will also be asked to provide some demographic information. This is not so you may be identified in this study but rather to help identify trends in the data according to variables such as online teaching experience, background etc.

- At no time will be you identified by name in the subsequent write-up of this project. Your status within the e-learning community may be mentioned but only through titles such as "lecturer", "educational developer" etc.

- Data collected as the result of this online survey will be kept in a locked cabinet in my office and then destroyed after 5 years.

- The results of this study are likely to be available towards the end of 2006. I would be more than happy to inform you of the results if you wish me to do so. Please contact me via the address provided.

- If you have any further questions regarding any facet of this project please do not hesitate to contact me on 02 6773 5082 or mparkes2@une.edu.au

Appendix 6 – Continued

This project has been approved by the Human Research Ethics Committee of the University of New England (Approval No HE06/018 Valid to 15/03/2007)

Should you have any complaints concerning the manner in which this research is conducted, please contact the Research Ethics Officer at the following address:

Research Services
University of New England
Armidale, NSW 2351.
Telephone: (02) 6773 3449 Facsimile (02) 6773 3543
Email: Ethics@pobox.une.edu.au

Appendix 6 – Continued

Participant Consent Form

Project Title: *Identification of the Competencies Required to be an Effective E-Learner*

Project Aims: To identify the knowledge, skills and attitudes considered necessary for effective learning within e-learning (online) environments.

Contact Details:

Dr Chris Reading (Principal Supervisor)	Mitchell Parkes (PhD Student)
Lecturer ICT Education	Lecturer ICT Education
School of Education, University of New England, Armidale, Australia	School of Education, University of New England, Armidale, Australia
02 6773 5060	02 6773 5082
creading@une.edu.au	mparkes2@une.edu.au

To confirm that you wish to be a participant in the online survey please send an e-mail acknowledging as such to: mparkes2@une.edu.au.

Your sending of this e-mail will be taken as confirmation of the following:

I (the participant) have read the information contained in the Information Sheet for Participants and any questions I have asked have been answered to my satisfaction. I agree to participate in the panel workshop, realising that I may withdraw at any time. I understand that research data gathered for the study will be published initially as a PhD thesis and give my consent for it to be used in this thesis and subsequent publications, provided my name is not used.

I also give my consent for the proceedings of the workshop to be recorded understanding that at no point will I be identified other than as "a member of the panel" or my status within the e-learning community (for example: "an educational developer", "a lecturer")

Thank you

Mitchell Parkes
Lecturer ICT Education
School of Education,
University of New England, Armidale, 2351

Appendix 7 – Screenshots of Web-based External Validation Questionnaire

Section One – collection of demographic information.

External Validation of e-Learner Competencies

This study has UNE Ethics Approval - HE06/018

Section One

Could you please provide the following demographic data. No attempt will be made to identify you and all data collected will be aggregated. The purpose of this demographic information is to determine if any differences or trends exists between e-learners.

1. Are you

       ○ *Male* ○ *Female*

2. What is your age range

| ○ Under 21 | ○ 21 to 25 | ○ 26 to 30 | ○ 31-35 | ○ 36-40 | ○ 41-45 | ○ 46-50 | ○ 51-55 | ○ Over 55 |

3. How would you rate your experience with e-learning?

| ○ No Experience | ○ Little Experience | ○ Some Experience | ○ Experienced | ○ Very Experienced |

4. How would you rate your experience with computers in general?

| ○ No Experience | ○ Little Experience | ○ Some Experience | ○ Experienced | ○ Very Experienced |

*5. Which School is your study **mainly** located within. (Please only select **one**)*

Arts, Humanities and Social Sciences	Economics, Business and Law	Education, Health and Professional Development and Leadership	The Sciences
Music ▾	New England Business School ▾	Education ▾	Biological, Biomedical & Molecular Sciences ▾

Section Two – rating of performance dimensions and e-learning competencies.

Section Two

I. Adopts an appropriate approach to learning	Importance	Difficulty	Preparedness
1. understands own cognitive processes and thinking strategies	Please make a selection ▾	Please make a selection ▾	Please make a selection ▾
2. adapts learning style to the learning environment	Please make a selection ▾	Please make a selection ▾	Please make a selection ▾
3. adapts technology to match own learning style	Please make a selection ▾	Please make a selection ▾	Please make a selection ▾
Overall Rating Adopts an appropriate approach to learning	Please make a selection ▾	Please make a selection ▾	Please make a selection ▾

Dropdown options shown: Please make a selection / irrelevant / not very essential / somewhat essential / essential / very essential

II. Approaches and engages with tasks strategically	Importance	Difficulty	Preparedness
1. identifies the requirements necessary to complete a task	Please make a selection ▾	Please make a selection ▾	Please make a selection ▾
2. plans an appropriate strategy to undertake a task	Please make a selection ▾	Please make a selection ▾	Please make a selection ▾
3. uses problem solving strategies	Please make a selection ▾	Please make a selection ▾	Please make a selection ▾
engages in the process of reflection	Please make a selection ▾	Please make a selection ▾	Please make a selection ▾
Overall Rating Approaches and engages with tasks strategically	Please make a selection ▾	Please make a selection ▾	Please make a selection ▾

Appendix 8 – Verification of Amalgamated List by Panel Members

	School of Education
UNE – THE UNIVERSITY OF NEW ENGLAND	Armidale, NSW 2351 Australia
	Telephone [Int'l + 61 2] (02)6773 4221 / 6773 2560

Identification of the Competencies Required to be an Effective e-Learner

Verification of Combined Lists

Monday 30th January, 2006

Dear

Please find attached the combined list of the Performance Dimensions and associated Competencies derived from the two panel workshop which took place on the 31st October and 21st November respectively. Again, I thank you for your participation in this process.

Since the two panel workshops, I have reviewed the Performance Dimensions and Competencies developed by each panel and combined them to form the draft list provided. During this review process duplicate items have been deleted and similar competencies combined or reworded. However, in doing such modifications, I have been careful to try and capture the original intent under which each item was developed.

To conclude this process I would be grateful if you could review the list, making comments where necessary. In particular, could you please consider the following:

1. Are there any Performance Dimensions you feel need to be added, combined or deleted?
2. Do the competencies reflect accurately the Performance Dimension with which they are associated?
3. Are there any competencies you feel are superfluous?
4. Are there any competencies you feel are ambiguous?
5. Are there any competencies you feel would need to be reworded for clarification purposes?

I have created this list of Performance Dimensions and their associated Competencies as a Word form. Next to each Performance Dimension are two checkboxes – OK or Reword. If you are happy with the Performance Dimension and its associated Competencies simply click the OK box. If you feel changes are necessary please click the Reword box. I've also included a text field for you to add comments if you indicate rewording is necessary. Could you please be very specific about what changes you feel need to be made. I've also included a section for general comments at the end of the document.

If you recall, the BARS process works by having a representative sample of specialists moving towards and reaching consensus. Could you please be mindful of this as you review the draft list.

I'd be grateful if you complete this process and email the completed form to me by **Friday 17th February 2006**. If you have any questions please do not hesitate to contact me by phone on 6773 5082 or email at mparkes2@une.edu.au

I have appreciated your input during this phase of my study. I hope that you have found the panel sessions and subsequent activities as interesting as I have. Thank you for your time and contributions.

Best Wishes

Mitchell Parkes

Appendix 8 – Continued

Competencies Required to be an Effective e-Learner
Verification Form

Name: «Name»

_____

When completing this form could you please consider the following:

1. Are there any Performance Dimensions you feel need to be added, combined or deleted?

2. Do the Competencies reflect accurately the Performance Dimension with which they are associated?

3. Are there any competencies you feel are superfluous?

4. Are there any competencies you feel are ambiguous?

5. Are there any competencies you feel would need to be reworded for clarification purposes?

If you are happy with the Performance Dimension and its associated Competencies simply click the OK box. If you feel changes are necessary please click the Reword box. I've also included a text field for you to add comments if you indicate rewording is necessary. Could you please be very specific about what changes you feel need to be made

Performance Dimensions are in bold and their associated competencies follow as bulleted points.

Accepts the use of technology in the learning environment

- participates as part of a learning community
- accepts the limitations of the technology
- works within constraints of the system
- uses a range of software with skill and purpose
- recognises the reification/metaphor of the virtual learning environment

OK ☐ Reword ☐

Comment: _____

Actively seeks information

- actively seeks information through either own enquires or the questioning of others
- works outside the technology and the learning environment
- actively engages in the learning experience

OK ☐ Reword ☐

Comment: _____

Appendix 8 – Continued

Anticipates and makes allowance for "wait time" in asynchronous discussions

- recognises the asynchronous nature of the learning medium
- allows time for different responses to arrive
- allocates sufficient time for response to be sent and received when planning a timeframe

OK ☐ Reword ☐

Comment: _____

Communicates effectively with members of the learning community

- expresses a point of view clearly and concisely
- demonstrates a willingness to contribute
- establishes unofficial communication links
- demonstrates inter-personal communication skills
- collaborates with others to develop shared understandings
- applies the rules of netiquette consistently

OK ☐ Reword ☐

Comment: _____

Creates opportunities to interact

- arranges schedule to allow for regular online sessions
- actively seeks interaction with other members of the learning community
- shares ideas, information and sources of information freely with members of the learning community

OK ☐ Reword ☐

Comment: _____

Critiques and evaluates effectively

- critiques and evaluates information resources
- critiques responses of others in positive terms
- displays an appropriate degree of scepticism when evaluating items
- displays an appropriate level of content related knowledge
- critically evaluates a set of search results
- critically evaluates a web site

OK ☐ Reword ☐

Comment: _____

Appendix 8 – Continued

Demonstrates a range of literacies (multiliterate)

- deals with the distributed/abstracted nature of the learning environment
- writes coherent responses
- employs visual literacy for understanding
- uses tools within the learning environment effectively
- presents a point of view clearly and concisely
- manages information across a variety of formats (e.g. audio, visual, etc.)
- uses the language appropriate to the medium and context
- reads at a level suitable for the task

OK ☐ Reword ☐

Comment: _____

Demonstrates confidence as a learner

- displays confidence as a learner
- demonstrates a positive self-concept
- makes contributions with confidence
- understands the value of self development

OK ☐ Reword ☐

Comment: _____

Demonstrates screen literacy

- identifies and uses the key elements of a Graphic User Interface
- uses system and application software with confidence and purpose
- recognises and understands the functionality of the various elements making up a software interface

OK ☐ Reword ☐

Comment: _____

Develops relationships within the learning community

- interacts appropriately with members of the learning community
- participates in unofficial communication
- develops networks inside and outside the learning community

OK ☐ Reword ☐

Comment: _____

Appendix 8 – Continued

Directs selective attention towards the available offerings

- works to a disciplined timefame
- sifts and filters responses
- devises strategies for selecting the content with which to engage
- evaluates the utility of information

OK   ☐   Reword ☐

Comment: _____

Displays independence as a learner

- identifies reasons and motivations for wishing to study
- manages and is responsible for own learning
- displays an appropriate level of motivation
- understands the value of doing tasks even if not directly related to assessment
- identifies and rectifies gaps in one's own understanding
- independently completes set tasks
- contributes new knowledge to a discussion
- maintains independence of thought
- works to a disciplined timeframe

OK   ☐   Reword ☐

Comment: _____

Employs strategic learning principles

- identifies the requirements necessary to complete a task
- manages time effectively
- uses problem solving strategies
- deals with distributed/abstracted nature of the learning environment

OK   ☐   Reword ☐

Comment: _____

Engages in reflection

- reflects upon the process as well as the product
- evaluates a response in terms of how it may contribute to own personal knowledge and understanding
- sets aside time to reflect upon completed tasks
- compares and contrasts a range of possible solutions a range of solutions before selecting one
- reflects upon own thinking and actions

OK   ☐   Reword ☐

Comment: _____

Appendix 8 – Continued

Expresses oneself clearly and concisely

- presents a point of view clearly and concisely
- uses appropriate context related language in responses
- displays an appropriate level of content related knowledge

OK ☐   Reword ☐

Comment: _____

Has a personal conception of learning

- shares ideas, information and sources of information freely
- collaborates with others to develop shared understandings
- understands that learning is a transformative process
- demonstrates people management skills

OK ☐   Reword ☐

Comment: _____

Interacts effectively with members of the learning community

- actively seeks interaction with other members of the learning community
- reads and responds to posts appropriately
- understands that responses in online environments can be misinterpreted
- encourages others to post through positive responses
- recognises the benefits of alternate perspectives provided by others
- alternate perspectives provided by others
- makes original contributions to add to collective knowledge
- understands the needs of others
- deals with conflict situations effectively
- asks for verification to ensure sufficient understanding

OK ☐   Reword ☐

Comment: _____

Interprets the nature of tasks effectively

- analyses tasks to be undertaken
- identifies the requirements necessary to complete a task
- plans an appropriate strategy to undertake a task

OK ☐   Reword ☐

Comment: _____

Appendix 8 – Continued

Knows how to construct knowledge

- synthesises individual knowledge components to form coherent understanding
- adopts expressions developed by the learning community in own responses
- engages in collaborative problem solving practices
- justifies own stance on an issue
- monitors and evaluates own cognitive processes and thinking strategies

OK ☐   Reword ☐

Comment: _____

Maintains a consistent train of thought over time

- locates and remembers key navigation points within knowledge space
- anticipates and makes allowance for "wait time" in asynchronous discussions
- directs attention to the task at hand
- works to a disciplined timeframe

OK ☐   Reword ☐

Comment: _____

Makes connections between prior knowledge and new knowledge

- forms connections between prior knowledge and new knowledge
- synthesises individual knowledge components to form coherent understanding
- transfers knowledge between domains to improve performance and understanding
- understands the nature of knowledge

OK ☐   Reword ☐

Comment: _____

Manages time effectively

- prioritises competing tasks within a timeframe
- balances work, social, family and study commitments effectively
- schedules tasks effectively
- works to a disciplined timeframe
- displays self-direction as a learner
- able to stay on task

OK ☐   Reword ☐

Comment: _____

Appendix 8 – Continued

Navigates large bodies of content on the Internet effectively

- searches with purpose using Boolean operators
- finds relevant information efficiently
- uses search engines effectively
- critiques and evaluates information resources
- locates and moves around key navigation points on the Internet

OK ☐ Reword ☐

Comment: _____

Open and accepting of new ideas

- accepts and acts upon critique
- open to new ideas
- analyses feedback effectively
- relates critique to practice
- willing to have ideas challenged
- uses judgment and decides upon alterations in behaviour
- uses triangulation to verify reasoning
- determines the appropriate time to listen and contribute

OK ☐ Reword ☐

Comment: _____

Performs a range of technical tasks

- initiates a remote connection
- locates and logs on to a network
- attaches and uploads documents
- manages information across a variety of formats (e.g. audio, visual, etc)

OK ☐ Reword ☐

Comment: _____

Problem solves technical issues

- employs a logical process to identify and solve a computer problem
- identifies the source of a computer problem as either hardware or software
- seeks technical assistance when difficulty arises

OK ☐ Reword ☐

Comment: _____

Appendix 8 – Continued

Processes information in a meaningful way

- engages with information in order to facilitate learning
- critiques and evaluates information resources
- evaluates the utility of information
- justifies the selection of information into an argument
- records information appropriately

OK   ☐   Reword ☐

Comment: _____

Solves problems effectively

- uses problem solving strategies
- engages in collaborative problem solving practices
- monitors and evaluates own cognitive processes and thinking strategies

OK   ☐   Reword ☐

Comment: _____

Triangulates information from a variety of sources

- makes judgments about the authority of information
- evaluates the utility of information
- critiques and evaluates information resources

OK   ☐   Reword ☐

Comment: _____

Turns knowledge into product effectively

- synthesises ideas from several sources to create a knowledge product
- synthesises individual knowledge components to form coherent understanding
- writes responses which synthesise a range of ideas

OK   ☐   Reword ☐

Comment: _____

Understands own learning style

- understands own cognitive processes and thinking strategies
- adapts learning style to environment
- ability to change learning based upon new experience

OK   ☐   Reword ☐

Comment: _____

Appendix 8 – Continued

Understands the context of the learning medium

- recognises the reification/metaphor of the virtual learning environment
- uses the language appropriate to the medium and context
- deals with the distributed/abstracted nature of the learning environment

OK ☐   Reword ☐

Comment: _____

Uses feedback effectively

- accepts feedback from others
- uses feedback to self critique
- modifies a course of action based upon feedback
- refines ideas to present a point of view clearly and concisely

OK ☐   Reword ☐

Comment: _____

Uses hardware effectively

- displays a level of familiarity of the technology
- performs a range of basic computing tasks such as using a mouse or keyboard to access software
- loads and accesses optical discs (CD, DVD)
- demonstrates a familiarity with the keyboard layout
- types at a speed appropriate for the given task
- connects peripheral devices to the computer

OK ☐   Reword ☐

Comment: _____

Uses software effectively

- uses a range of software with skill and purpose
- identifies system requirements for a piece of software
- willing to explore new software
- integrates a variety of software applications to create a product
- uses system and application software with confidence and purpose

OK ☐   Reword ☐

Comment: _____

Appendix 8 – Continued

Uses teaching staff effectively

- understands the facilitation role of lecturer in online learning environment
- asks for guidance or seek clarification for misunderstandings
- recognises lecturer's response as a contribution and not the final word on a issue
- willing to comment upon or critique a response made by the lecturer

OK ☐   Reword ☐

Comment: _____

Uses technology confidently

- uses technology at an advanced level
- uses a range of computer applications with skill and purpose
- explores technology and its applications
- uses technology to synthesise ideas to create a knowledge product
- adapts technology to own learning style
- accepts the use of technology in the learning process
- applies technology to solve problems
- generalises skills across different applications and situations
- uses technology creatively to achieve desired results

OK ☐   Reword ☐

Comment: _____

Uses the Internet effectively

- sources information from the Internet rapidly
- searches the Internet strategically
- locates and moves around key navigation points on the Internet
- downloads and uploads information and resources
- demonstrates knowledge and use of Learning Management Systems (e.g. Web CT)
- uses a web browser with skill and purpose

OK ☐   Reword ☐

Comment: _____

Uses the technology intuitively

- displays computing skills beyond a basic level
- displays innate comfort with the technology
- selects the appropriate software tool for the task at hand
- independently completes set tasks

OK ☐   Reword ☐

Comment: _____

Appendix 8 – Continued

Values the contributions made by others

- understands the value of contributions made by others
- recognises the benefits of a alternate perspectives provided by others
- acknowledges the ideas of others in a response

OK ☐ Reword ☐

Comment: _____

Views oneself as a member of the learning community

- structures posts to be inclusive of all participants
- takes on multiple roles within the learning community
- understands the value of the learning community
- responds to others with respect
- acknowledges the contributions of others in the learning community
- displays a sense of ownership towards the learning community
- prepared to learn as part of a group
- shares own experience in responses when relating to topic and others

OK ☐ Reword ☐

Comment: _____

Willing to reveal oneself to members of the learning community

- open and honest to members of the learning community
- asks for guidance or seek clarification for misunderstandings
- expresses a point of view with confidence

OK ☐ Reword ☐

Comment: _____

Willing to upload as much as download

- shares ideas, information and sources of information freely
- collaborates with others to develop shared understandings
- recognises and values the expertise of the various members of the learning community
- uses the expertise of others to develop shared understandings
- seeks alternate sources of information to be fed back into the learning community as new knowledge

OK ☐ Reword ☐

Comment: _____

Appendix 8 – Continued

Works outside the boundaries of the learning environment

- develops communication networks outside the learning environment
- works outside the technology of the learning environment

OK   ☐   Reword ☐

Comment: _____

When completed could you please email me this completed document to:

mparkes2@une.edu.au

Again, thank you for your participation.

Best wishes

Mitchell Parkes

Appendix 9 – Verification of Amalgamated List by Panel Members – Changes

Item	Panel Member(s) Comment	Proposed Changes
Accepts the use of technology in the learning environment	Not sure if it fits here but what about willingness/ability to extend/push the limits of technology/system?	"Accepts" is difficult to measure considered better covered by Understands the context of the learning medium. Delete and reassign
participates as part of a learning community	Not related to technology (Communicates effectively); assumes a style of interactive learning add - to continually update technology knowledge	Reassign
accepts the limitations of the technology	accepts "and understands"…	Change to "Accepts and understands the limits of the technology"
uses a range of software with skill and purpose		Now considered superfluous
recognises the reification/metaphor of the virtual learning environment	Make more concrete - not literally applicable; reification/metaphor - "which is?"	Ambiguous - delete
Actively seeks information	Not sure how the dot points relate to the performance dimension 1 and 2 seem to be outside of technology and 3 seems more about the teaching learning dimension. I could ask if person was more of an inter or intra personal learner; uses a range of info skills to seek info - seeks information from a variety of sources.	
actively seeks information through either own enquiries or the questioning of others	"Enquiries" Spelling x 4; actively seeks information "about technology"… + relates to the learning community competency above	Related to learning community - Reassign
works outside the technology and the learning environment	to seek information; Should an e-learner have to work outside the technology - or should they make the most of the available technologies?	Change to "Prepared to go outside the technology and learning environment to seek information"
actively engages in the learning experience	encompasses far more than information search; whose learning?	Superfluous - too broadly defined
Anticipates and makes allowance for "wait time" in asynchronous discussions	Recognises the asynchronous nature of some learning media	No competencies remain therefore delete performance dimension
recognises the asynchronous nature of the learning medium		Change to "Recognises and makes allowances for the asynchronous nature of the learning environment"
allows time for different responses to arrive	teachers or learner?	Combined with above and delete
allocates sufficient time for response to be sent and received when planning a timeframe	Would you plan a timeframe for communication?	Combined with above and delete
Communicates effectively with members of the learning community	The idea of initiating communication might be better than describing own links as official or unofficial - seems less subversive	
demonstrates a willingness to contribute		Clarify to "Contributes to online discussions"

Appendix 9 – Continued

Item	Panel Member(s) Comment	Proposed Changes
establishes unofficial communication links	Reassigned to create opportunities to interact, why this?; this seems to negate the learning communities bit; What is "official" and "unofficial" – "initiates"	Delete – now considered a duplicate of "Prepared to Reassign outside the technology and learning environment to seek information"
collaborates with others to develop shared understandings		Clarify to "Collaborates with members of the learning community to develop shared understandings"
Creates opportunities to interact	Do you want to get out synch/asynch modes as well?; Add something about making considered responses which promote discussion?; responds constructively to others; add encourages responses by other students – more than "seeks"	Clarify Dimension to "Creates opportunities for interaction"
arranges schedule to allow for regular online sessions	Time management; Does anyone actually do this?	
Actively seeks interaction with other members of the learning community		
shares ideas, information and sources of information freely with members of the learning community	Reassigned to Communicates effectively with members of the learning community	Reassign
Critiques and evaluates effectively		
critiques and evaluates information resources		
critiques responses of others in positive terms		
displays an appropriate degree of skepticism when evaluating items	Though what do you define as appropriate?;?	Delete – considered a duplicate of "Critiques and evaluates information resources"
displays an appropriate level of content related knowledge	Though what do you define as appropriate?	
Critically evaluates a set of search results	Info retrieval	Reassign
critically evaluates a web site	Info retrieval	Reassign
Demonstrates a range of literacies (multiliterate)		Performance dimension problematic and competencies might belong in other places
deals with the distributed/abstracted nature of the learning environment	Deals with … is a bit abstract/ambiguous – but I can't think what to use in its place; What is meant by "deals with"? Can a more concise verb be used?	Clarify to makes allowances for the virtual nature of the learning environment – reassign to "Accepts the use of technology in the learning environment"
writes coherent responses	How is this different from "Expresses a point of view clearly and concisely"; to whom	Considered a duplicate of "Expresses a point of view clearly and concisely"

Appendix 9 – Continued

Item	Panel Member(s) Comment	Proposed Changes
employs visual literacy for understanding		
uses tools within the learning environment effectively	this is the odd one out more related to tech skills; what sort of tools?	delete too broad and ambiguous plus covered by other competencies
presents a point of view clearly and concisely	to whom?	Change to "Expresses a point of view clearly and concisely"
manages information across a variety of formats (e.g. audio, visual, etc.)	How do you assess this?	Clarify to Clarify to "Able to work with digital information in a variety of formats (e.g. audio, visual etc.)
uses the language appropriate to the medium and context		Delete - Considered a duplicate of "Uses context related language in responses"
reads at a level suitable for the task	Is this necessary?; How do you assess this?; Which is?	
Demonstrates confidence as a learner	I would add - Prepared to transform their knowledge based on input from others - I realise this is mentioned later, however I believe this to be an important competency of a confident learner; active learner?	
displays confidence as a learner	Wouldn't the learner do this by demonstrating the next 3?	Delete Superfluous - defined by other competencies
demonstrates a positive self-concept		
makes contributions with confidence		
understands the value of self development	I have a pathological aversion to "understands" as it is nefarious… acknowledges or articulates?	Change to Acknowledges the value of self development
Demonstrates screen literacy	"uses tools within the learning environment effectively" - would fit here; Does this have any relevance? How do you assess it?	Delete or Redefine performance dimension
identifies and uses the key elements of a Graphic User Interface	"Graphical"	Change to "Identifies and uses the key elements of a Graphical User Interface"
Develops relationships within the learning community	Though what of the person who is very driven and focused on work? They could develop official" relationships/Communities and be highly effective but not participate in unofficial. This seems to be displaying a cultural bias	After reallocation of competencies Performance Dimension has only one left.
participates in unofficial communication	again is unofficial still part of the learning community or is it going behind and isolating others?; "Electronic" communication?; "unofficial?"	Delete - Incorrectly assigned plus now considered a duplicate of "Prepared to go outside the immediate learning environment to seek information"
develops networks inside and outside the learning community	Contradiction between within and outside	Delete - Incorrectly assigned plus now considered a duplicate of "Prepared to go outside the immediate learning environment to seek information"

Appendix 9 – Continued

Item	Panel Member(s) Comment	Proposed Changes
Directs selective attention towards the available offerings	Does e-learning require the necessity for timelines, at least to some extent?; relates to "Actively seeks information" and "Critiques and evaluates effectively"	Dimension considered superfluous
works to a disciplined timeframe	Can you teach me how to do this please?; Time management not selective attention; how many people do this?	Reassign
sifts and filters responses		Reassign to critiques and evaluates effectively"
devises strategies for selecting the content with which to engage		Reassign
evaluates the utility of information	relevance, usefulness?	Change to "Evaluates the relevance of information in terms of own requirements"
Displays independence as a learner		
identifies reasons and motivations for wishing to study	Not necessarily related to independence as a learner e.g. the boss told me to do a PhD	Ambiguous - delete
displays an appropriate level of motivation	Similar to point 1	Leave for external validation
understands the value of doing tasks even if not directly related to assessment		Change to "Acknowledges the value of doing tasks even if not directly related to assessment"
contributes new knowledge to a discussion	New viewpoints or ideas - new knowledge is what you should be creating at the higher levels of research	Change to "Contributes new ideas to an online discussion"
works to a disciplined timeframe	Reassign to Employs strategies learning principles; Is it intended to be listed in multiple sections; Time management not independence as a learner	Reassign
Employs strategic learning principles	Uses resources effectively; strategic learning focuses on assessment - may not be independent or deep i.e. good, capable	Redefine as Approaches and engages with tasks strategically
identifies the requirements necessary to complete a task	Suggest - analyses task requirements	Leave unchanged - competency means the same but is in a simpler language
manages time effectively	Need time management point	Ambiguous
uses problem solving strategies	This seems to be in a different category than the others	Too broad Reassign or delete
deals with distributed/abstracted nature of the learning environment	What does this mean?	Rephrase or delete
Engages in reflection	These points should define reflect or reflection a bit like describing a fizgig as being like a fizgig; Why? Reconsiders accuracy of assumptions+ looks at different perceptions + questions assumptions	Performance Dimension used to define itself Redefine
reflects upon the process as well as the product	considers not reflect	Rephrase

Appendix 9 – Continued

Item	Panel Member(s) Comment	Proposed Changes
evaluates a response in terms of how it may contribute to own personal knowledge and	Whose? But does this mean a discussion posting?	Clarify to "evaluates a information in terms of how it may contribute to own personal knowledge and understanding
sets aside time to reflect upon completed tasks	This point is unclear	Ambiguous considered superfluous
compares and contrasts a range of possible solutions a range of solutions before selecting one	delete a "range of solutions"x2; include "or" a range of solutions…	Change to "Compares and contrasts a range of possible solutions to a problem or task"
reflects upon own thinking and actions	Why?	Superfluous hard to express in behavioural terms
Expresses oneself clearly and concisely	This is very similar to "Demonstrates a range of multiliteracies Duplication	Superfluous Performance dimension
presents a point of view clearly and concisely	already used in "Communicates effectively…"	Delete - duplication
displays an appropriate level of content related knowledge		What constitutes appropriate?
Has a personal conception of learning	None of these three are really about personal conception of learning; If we look at Prosser and Trigwell et al I wonder if these descriptors are too singularly focused on a collaborative conception? Perhaps the Performance dimension needs rewording?; self development, change, development of own knowledge and skills, ability to transfer knowledge; at which level? See Entwistle 1988, Beatty and Morgan 1992	Delete - Performance dimension poorly defined
shares ideas, information and sources of information freely	These are interpersonal	Delete- Considered a duplicate of "Shares ideas, information and sources of information freely with members of the learning community"
collaborates with others to develop shared understandings	These are interpersonal	Reassign - not in applicable performance dimension
understands that learning is a transformative process		Change to "Acknowledges that learning is a transformative process
demonstrates people management skills	These are interpersonal; ?; conception of learning?	Reassign - not in applicable performance dimension
Interacts effectively with members of the learning community	This is a very global category that has a dash of many others	Delete performance dimension and reassign
reads and responds to posts appropriately		Delete duplicated by others
understands that responses in online environments can be misinterpreted	Reword verb; data literacy; uses strategies to avoid this	Change to "Composes online responses in order to avoid their misinterpretation"
encourages others to post through positive responses		Move to Creates opportunities for interaction
recognises the benefits of alternate perspectives provided by others	learner attribute not member of learning community	Reassign

Appendix 9 – Continued

Item	Panel Member(s) Comment	Proposed Changes
alternate perspectives provided by others	delete; typo hangover from #5?; delete; needs verb…acknowledges; 6th point repeat of the 5th; not clear; how does this effect this e-learner?;" alternate"?	Delete - typographical error
makes original contributions to add to collective knowledge		Delete - Considered a duplicate of "Collaborates with members of the learning community to develop shared understandings"
deals with conflict situations effectively	Avoids conflict situations	Clarify to "Avoids conflict situations with members of the learning community"
asks for verification to ensure sufficient understanding	learner attribute and repeat of "alternate perspectives"	
Interprets the nature of tasks effectively	2nd point is also listed in "Employs strategic learning principles"; lots of similarities with "Employs strategic learning principles"	Delete - now covered by dimension "Approaches and engages with tasks strategically"
analyses tasks to be undertaken		Delete - consider duplicate of "Identifies the requirements necessary to complete a task"
identifies the requirements necessary to complete a task		Delete - Duplicate
plans an appropriate strategy to undertake a task	this point to "Employs strategic learning principles", scrap the rest	Reassign
Knows how to construct knowledge	Just a thought should there be a question on the social construction of knowledge and more on individual construction?; Knowing how and what should be done are a lot different; relates to conception of learning	Rephrase performance dimension to "Able to construct knowledge"
synthesises individual knowledge components to form coherent understanding	Reassign to "Makes connections between prior knowledge and new knowledge"	Reassign
adopts expressions developed by the learning community in own responses	learns from others; "expressions"?	Change to "writes responses which synthesise a range of ideas"
engages in collaborative problem solving practices		
justifies own stance on an issue	Reassign to "Displays confidence as a learner"	Reassign
monitors and evaluates own cognitive processes and thinking strategies	reflective process Reassign to "Engages in Reflection"	Reassign
Maintains a consistent train of thought over time	Would "relevant trains of thought" be more important as I would expect some changes (and therefore not necessary consistent thoughts) during an asynchronous discussion; "consistent?"	Delete Dimesnion problematic and covered by others
locates and remembers key navigation points within knowledge space	This sounds very Post Modernist; define "knowledge space"	Ambiguous
anticipates and makes allowance for "wait time" in asynchronous discussions	This is "Wait time"; Duplication	Maintain Wait time PD - deleted - time management
directs attention to the task at hand	Time management	Reassign

Appendix 9 – Continued

Item	Panel Member(s) Comment	Proposed Changes
works to a disciplined timeframe	Time management; Duplication	Delete - Duplication
Makes connections between prior knowledge and new knowledge		Redefine performance dimension - subsume under "Able to construct knowledge"
synthesises individual knowledge components to form coherent understanding	understanding(s)	Change to synthesises individual knowledge components to form coherent understanding(s)
transfers knowledge between domains to improve performance and understanding	Not clear "domains" transfer between topics, subjects, areas of endeavour; "domains?"	Delete - considered a duplicate of "Synthesises ideas from several sources to form coherent understanding"
understands the nature of knowledge	Last item is a big ask? To demonstrate epistemology and or ontology?; ?	Delete - not in behavioural terms. Superfluous defined by other competencies
Manages time effectively	Plans demonstrates planning skills; As said before, does e-learning break away from rigid timeframes? Take for example checking discussion boards - not done to timeframe - when time available or to avoid doing something else.	
prioritises competing tasks within a timeframe	I have difficulty with "timeframe" as it is unspecified	Clarify to "Priortises competing tasks within the time available"
balances work, social, family and study commitments effectively		Clarify to "Balances, work, social, family and study commitments"
schedules tasks effectively		Delete - Considered a duplicate of ""Priortises competing tasks within the time available"
displays self-direction as a learner		Delete - not in behavioural terms unable to be measured
Navigates large bodies of content on the Internet effectively	I would add - recognises and accepts there is more information than can be realistically be read or used; info retrieval skill	Subsumed by Uses the Internet Effectively
searches with purpose using Boolean operators		Reassign
finds relevant information efficiently		Reassign
uses search engines effectively		Reassign
critiques and evaluates information resources		Delete - considered a duplicate of" "Evaluates the relevance of information in terms of own requirements"
locates and moves around key navigation points on the Internet	ordered first?? Or is ordering unimportant; what is meant by this; what are "navigation points"	Rephrase - ambiguous
accepts and acts upon critique	Considers - the critique may not be constructive or correct	Clarify to "Considers and acts upon feedback from members of the learning community"
open to new ideas	Descriptor the same as concept	Delete – superfluous, not in behavioural terms

Appendix 9 – Continued

Item	Panel Member(s) Comment	Proposed Changes
analyses feedback effectively	reflection	Delete Too broad and duplicated by others
uses judgment and decides upon alterations in behaviour		delete duplicate of "Modifies a course of action based upon feedback"
uses triangulation to verify reasoning		
determines the appropriate time to listen and contribute	change "and" to "or" x 2	Change to "Determines when to listen or contribute"
Performs a range of technical tasks	Irrelevant?	
Initiates a remote connection	Can you have an e-learner who cannot do this?	
Locates and logs on to a network	Can you have an e-learner who cannot do this?	
Attaches and uploads documents	Can you have an e-learner who cannot do this?	
Manages information across a variety of formats (e.g. audio, visual, etc)	The above are very specific and the last dot point is very general; change expand to "digital information"; Duplication; more complex than other three	Clarify to "Able to work with digital information in a variety of formats (e.g. audio, visual etc.)
Problem solves technical issues	Include uses help function, uses web search for information; is this really e-learning	
seeks technical assistance when difficulty arises	After working through dot points 1 and 2	Clarify to "Seeks technical assistance from others after other avenues of assistance have been exhausted"
critiques and evaluates information resources	Information literacy skill; Duplication	Delete – duplication
evaluates the utility of information	Perhaps it is just me but "utility" is a little too double meaning – Bush decides on the utility of information if it fits with the agenda he is pushing; Evaluates not processes; Duplication	Considered a duplicate of "Evaluates the relevance of information in terms of own requirements" move to critiques and evaluates
justifies the selection of information into an argument		
records information appropriately	records is not processes	Reassign
Solves problems effectively	Problem solving strategies; Duplication	Delete – duplicated performance dimension
monitors and evaluates own cognitive processes and thinking strategies	This is reflection	Reassign
Triangulates information from a variety of sources	None of these indicate that triangulation is occurring – judgments can be made the authority of information that don't involve triangulation; Duplication; Technical term that narrows competence	Redefine performance dimension ambiguous
makes judgments about the authority of information		Delete duplicated
evaluates the utility of information	same comment re "utility" as above	Delete - Considered a duplicate of "Evaluates the relevance of information in terms of own requirements"

Appendix 9 – Continued

Item	Panel Member(s) Comment	Proposed Changes
critiques and evaluates information resources	Reassign to "Process information in a meaningful way.	Reassign
Turns knowledge into product effectively		Delete - Now duplicated by able to construct knowledge
synthesises ideas from several sources to create a knowledge product		Clarify and combine to "Synthesises ideas from several sources to form coherent understanding
synthesises individual knowledge components to form coherent understanding	Components --> knowledge elements to form schemata	Clarify and combine to "Synthesises ideas from several sources to form coherent understanding
writes responses which synthesise a range of ideas		Delete - duplicated
Understands own learning style	Am I losing the plot… how evaluate understanding of own learning style?; These are good but do not show that someone has the vaguest idea about their learning style; see "Conception of learning"	?
understands own cognitive processes and thinking strategies	What does point 2 mean?	?
adapts learning style to environment	Should they have to?	?
ability to change learning based upon new experience	?	
Understands the context of the learning medium	Think some of the previous could be worthwhile here; Duplicated; replace "Context" with "Affordances"	Affordances can be ambiguous more about environment per se rather than what it can offer
recognises the reification/metaphor of the virtual learning environment		? Acknowledges that online learning environments are metaphors for real life analogs
uses the language appropriate to the medium and context		Delete - Considered a duplicate of "Uses context related language in responses"
deals with the distributed/abstracted nature of the learning environment		?
Uses feedback effectively	How is this different to "Open and accepting of new ideas"?; Already covered?	Delete and reassign - Duplicated performance dimension
accepts feedback from others		reassign
uses feedback to self critique		reassign
modifies a course of action based upon feedback		reassign
refines ideas to present a point of view clearly and concisely		Reassign
Uses hardware effectively	Could be subsumed under "Performs a range of technical tasks"; How is this different to "Performs a range of technical tasks"?; Already covered ca an e-learner function without these?	Combined with software dimension under new dimensions "Uses relevant technology effectively"

Appendix 9 – Continued

Item	Panel Member(s) Comment	Proposed Changes
displays a level of familiarity of the technology	"A level of…" is somewhat ambiguous – i.e. no knowledge is a level (?) Again I haven't identified what I'd use in its place – but you could just drop the qualifier so it reads 'display familiarity with the technology' or is this whole dot point subsumed in the next?	Delete – Superfluous
Uses software effectively	Duplicated?	
Uses a range of software with skill and purpose	Same thing as "Accepts the use of technology in the learning environment"	Delete – ambiguous and covered elsewhere
willing to explore new software		duplicated to some extent by explores technology and its applications
uses system and application software with confidence and purpose		Delete – Considered a duplicate of "Clarify to "Uses technology to assist in the creation of knowledge products""
Uses teaching staff effectively	Independent, Conception of learning	
understands the facilitation role of lecturer in the learning environment		Change to "Acknowledges the facilitation role of the lecturer in the learning environment"
asks for guidance or seek clarification for misunderstandings	But not too often!	
Willing to comment upon or critique a response made by the lecturer		Clarify to "Is prepared to comment upon or critique a response made by the lecturer
Uses technology confidently	Does one have to be able to use technology at and advanced level to be an effective learner. There are a number of the technologies that I don't feel "advanced" in. Perhaps competently is sufficient; Already covered; split into technical competencies and e-learning	Consider redefine or reassigning performance dimension to Use Relevant technology effectively
uses technology at an advanced level		Delete too broad
uses a range of computer applications with skill and purpose		Delete too broad
uses technology to synthesise ideas to create a knowledge product	How does technology synthesise ideas?	Clarify to "Uses technology to assist in the creation of knowledge products" Reassign to "Able to construct knowledge"
uses technology creatively to achieve desired results	This seems to be a step above "confident use"; This is a bit vague	Delete – Ambiguous and considered duplicate of "Applies technology to solve problems"
Uses the Internet effectively	I would add - able to record references of information sourced online; No mention of communication e.g. email; Duplicated; relates to "Navigates large bodies of content on the Internet effectively	Duplicated performance dimension delete and reassign

Appendix 9 – Continued

Item	Panel Member(s) Comment	Proposed Changes
sources information from the Internet rapidly		Delete considered a duplicate of "finds relevant information efficiently"
locates and moves around key navigation points on the Internet	locates and retrieves	
Uses the technology intuitively	This is a really difficult one. These points other than point 2 do not indicate intuition; competence, skilled: automatic selection, application automatic	Ambiguous performance dimension redefine or delete
displays computing skills beyond a basic level	Knowledge or experience not intuition	Delete - Ambiguous and duplicated
selects the appropriate software tool for the task at hand		Change to "Selects the appropriate technology tool for the task at hand and Reassign to Uses relevant technology effectively
independently completes set tasks	This is talking about a different set of skills than intuitive use of technology; change to "independently uses technology to complete set tasks"	Ambiguous and too broad, covered by others - delete
Values the contributions made by others	Is sensitive to the contributions of others; Values contributions made by others; Consider including "adopts expressions developed by the learning community in own responses"; Duplicated	Performance dimension problematic redefine or reassign
understands the value of contributions made by others		Change to "Acknowledges the value of contributions made by others in the learning community"
recognises the benefits of an alternate perspectives provided by others	grammar x 4	
Views oneself as a member of the learning community	This is good but repeated earlier a few times I think. Is there too many?	
structures posts to be inclusive of all participants		
takes on multiple roles within the learning community	"multiple roles"?; higher level - what roles?	Delete - ambiguous
understands the value of the learning community		Clarify to "Acknowledges the importance of learning with others"
acknowledges the contributions of others in the learning community		Delete - duplicate of "Acknowledges the value of contributions made by others"
displays a sense of ownership towards the learning community	belonging to group?	Clarify to "Demonstrates a sense of belonging towards the learning community"
prepared to learn as part of a group	Some people do not want to but still succeed	Clarify to "Prepared to learn as part of a group"
shares own experience in responses when relating to topic and others	Odd wording; risk taker, open - Reassign to "Willing to reveal…"	Reassign

Appendix 9 – Continued

Item	Panel Member(s) Comment	Proposed Changes
Willing to reveal oneself to members of the learning community	"to reveal" suggests for consideration - displays integrity with members of the learning community; related to displays confidence as a learner	Subsumed by Develops relationships with members of the learning community
open and honest to members of the learning community		Reassign
asks for guidance or seek clarification for misunderstandings		Delete - duplicated
expresses a point of view with confidence		Delete-duplicated
Willing to upload as much as download	Perhaps heading should reflect two way flow of communication rather than focus on the upload/download process; I know what is meant by upload/download in this context but will others?; Contribute as much as lurk; a rather technical way of expressing; links to "Communicates effectively with members of the learning community" and "Interacts effectively with members of the learning community"	Performance dimension superfluous covered in other areas - delete
shares ideas, information and sources of information freely		Delete- Considered a duplicate of "Shares ideas, information and sources of information freely with members of the learning community"
collaborates with others to develop shared understandings		Reassign to able to construct knowledge
recognises and values the expertise of the various members of the learning community		reassign to Values the contributions made by others
uses the expertise of others to develop shared understandings		Delete - duplicate of "Collaborates with others to develop shared understandings"
Works outside the boundaries of the learning environment	Perhaps 'Seeks to develop…' I've had some real problems trying to get input from non UNE sources. So many institutions, especially in the USA, seem unwilling to engage, answer questions or request for information; I'm not clear on what this dimension is trying to get at; Some points form others could be fruitfully Reassigned here - "establishes unofficial communication links", "participates in unofficial communication"; Already covered; Relates to "seeks alternate sources of information"	Superfluous performance dimension - delete
develops communication networks outside the learning environment	With whom?	Clarify to Develops communication networks outside of the immediate learning community"
works outside the technology of the learning environment	2nd point not clear - I'm not sure what this means.	Delete - ambiguous and now duplicate of above

Appendix 10 – Two-Sample Z-Tests for Computing and e-Learning Experience

The two-sample Z-test for proportion is used to evaluate if a significant difference between two sample proportions (LeBlanc, 2004). The null hypothesis is that there is no significant difference between the two sample proportions.

Level of experience	Computing Experience (student v. staff)	e-learning Experience (student v. staff)
No experience	N/A	N/A
Little experience	- 0.14	- 0.26
Some experience	0.378	- 0.11
Experienced	- 0.28	0.95
Very experienced	0.2	1.938

All of the values for Z were non-significant ($p > .05$) . Hence the null hypothesis that there was no significant differences between the two sample proportions was accepted.

Appendix 11 – Factor Analysis of Set Two, Set Three, and Set Four

Set Two

Applying the eigenvalue criterion of accepting values greater than one, five factors were extracted in 13 iterations.

Principal Component Factor Analysis for Set Two

Factor Eigenvalue	Variance (%)	Cumulative (%)	
1	4.986	33.2	33.2
2	1.928	12.9	46.1
3	1.497	10.0	56.1
4	1.358	9.0	65.1
5	1.170	7.8	72.9

Factor Solution for Set Two

Factor 1		Factor loading
15.1	uses a web browser with skill and purpose	0.905
15.2	uses search engines effectively	0.869
15.4	downloads and uploads information and resources	0.836
15.3	searches the Internet strategically	0.814

Factor 2		Factor loading
13.2	makes allowances for the virtual nature of the learning environment	0.916
13.1	demonstrates knowledge and use of Learning Management System	0.667
1.2	adapts learning style to the e-Learning environment	0.588
1.1	understands own cognitive processes and thinking strategies	0.548

Factor 3		Factor loading
13.4	integrates a variety of software applications to create a product	- 0.853
13.5	employs a logical process to identify and solve a computer problem	- 0.665
1.3	uses technology to support own learning style	- 0.659

Factor 4		Factor loading
8.2	responds to others with respect	0.774
13.3	selects the appropriate technology tool for the task at hand	0.766

Factor 5		Factor loading
8.1	shares personal experiences in responses when relating to topic and others	0.760
8.3	views oneself as a member of the learning community	0.684

Appendix 11 – Continued

Set Three

Applying the eigenvalue criterion of accepting values greater than one, five factors were extracted in 20 iterations.

Principal Component Factor Analysis for Set Three

Factor	Eigenvalue	Variance (%)	Cumulative (%)
1	4.669	31.3	33.2
2	2.023	13.5	44.8
3	1.530	10.2	55.0
4	1.341	8.9	63.9
5	1.050	7.0	70.9

Factor Solution for Set Three

Factor 1		Factor loading
3.4	applies the rules of netiquette consistently	0.858
7.3	anticipates and makes allowances for "wait time" in asynchronous discussions	0.706
7.2	balances work, social, family and study commitments	0.588
3.2	provides responses in clear, concise and unambiguous language	0.495
3.1	uses inter-personal communication skills	0.441

Factor 2		Factor loading
10.1	able to navigate large bodies of content	0.733
11.4	uses technology to assist in the construction of knowledge	0.729
7.4	works to a disciplined timeframe	0.580
7.1	priortises competing tasks within the time available	0.539

Factor 3		Factor loading
11.1	develops responses which synthesise a range of ideas	- 0.809
11.2	forms connections between prior knowledge and new knowledge	- 0.805
11.3	works with others to collaboratively construct knowledge	- 0.727

Factor 4		Factor loading
10.3	cross references between sources to determine accuracy	- 0.833
3.3	determines when it's time to 'listen' to or contribute a response	- 0.655
3.1	uses inter-personal communication skills	- 0.505
3.2	provides responses in clear, concise and unambiguous language	- 0.418

Factor 5		Factor loading
10.2	able to distinguish between relevant and irrelevant items	- 0.704
7.3	anticipates and makes allowances for "wait time" in asynchronous discussions	- 0.434

Appendix 11 – Continued

Set Four

Applying the eigenvalue criterion of accepting values greater than one, four factors were extracted in 7 iterations.

Principal Component Factor Analysis for Set Four

Factor	Eigenvalue	Variance (%)	Cumulative (%)
1	4.439	31.7	31.7
2	1.817	13.0	44.7
3	1.465	10.5	55.2
4	1.183	8.5	63.7

Factor Solution for Set Four

Factor 1		Factor loading
4.2	seeks interaction with other members of the learning community	0.854
4.3	encourages others to post through positive responses	0.737
9.2	contributes new ideas to a discussion	0.712
9.1	views oneself positively as a learner	0.615
4.1	arranges schedule to allow for regular online sessions	0.589
16.1	reads and writes at an appropriate level	0.589
9.3	justifies own stance on an issue	0.472

Factor 2		Factor loading
12.1	willing to have ideas challenged	0.930
12.3	uses feedback to evaluate own performance (self critique)	0.807
12.2	considers and acts upon feedback from members of the learning community	0.610

Factor 3		Factor loading
16.2	accesses information from a variety of sources (e.g. web pages, podcasts)	0.910
16.3	extracts information from a variety of formats	0.762
16.4	presents information in a variety of formats (video, audio, etc)	0.453

Factor 4		Factor loading
9.4	comments upon or critiques a response made by the lecturer	0.894

Appendix 12 – Detailed Cumulative Frequency Analysis Results

		Importance			Difficulty			Preparedness		
Competency	Response	All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)
1.1	5	20	15	27	9	5	13	14	25	0
	4	69	65	73	46	25	73	31	45	13
	3	94	90	100	83	75	93	74	90	53
	2	100	100	100	100	100	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
1.2	5	34	40	27	11	15	7	11	20	0
	4	83	80	87	49	45	53	49	60	33
	3	97	95	100	86	75	100	94	90	100
	2	100	100	100	97	95	100	97	95	100
	1	100	100	100	100	100	100	100	100	100
1.3	5	49	55	40	6	5	7	20	30	7
	4	74	70	80	31	30	33	60	70	47
	3	100	100	100	69	55	87	94	100	87
	2	100	100	100	94	95	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
2.1	5	74	70	80	0	0	0	26	45	0
	4	100	100	100	20	20	20	60	90	20
	3	100	100	100	66	55	80	91	100	80
	2	100	100	100	94	95	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
2.2	5	54	45	67	3	0	7	17	30	0
	4	97	95	100	23	20	27	51	80	13
	3	100	100	100	66	45	93	86	100	67
	2	100	100	100	94	90	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
2.3	5	40	35	47	3	0	7	17	25	7
	4	83	85	80	26	25	27	63	85	33
	3	97	95	100	74	70	80	91	100	80
	2	100	100	100	97	95	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
2.4	5	31	30	33	3	0	7	11	20	0
	4	71	65	80	26	15	40	46	55	33
	3	94	90	100	43	35	53	83	90	73
	2	100	100	100	89	80	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
3.1	5	49	40	60	3	5	0	20	35	0
	4	77	70	87	20	25	13	63	85	33
	3	94	90	100	60	50	73	97	95	100
	2	100	100	100	86	80	93	100	100	100
	1	100	100	100	100	100	100	100	100	100

Appendix 12 – Continued

Competency	Response	Importance			Difficulty			Preparedness		
		All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)
3.2	5	46	40	53	6	5	7	29	45	7
	4	94	90	100	29	25	33	57	85	20
	3	100	100	100	63	50	80	86	95	73
	2	100	100	100	94	90	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
3.3	5	29	30	27	3	5	0	12	20	0
	4	63	45	87	17	15	20	56	85	14
	3	91	90	93	57	40	80	91	100	79
	2	100	100	100	94	90	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
3.4	5	46	50	40	0	0	0	26	40	7
	4	77	90	60	9	10	7	66	90	33
	3	94	90	100	31	20	47	94	100	87
	2	100	100	100	80	70	93	97	100	93
	1	100	100	100	100	100	100	100	100	100
4.1	5	31	30	33	15	15	14	6	10	0
	4	57	50	67	38	40	36	32	45	14
	3	80	70	93	68	65	71	74	70	79
	2	97	100	93	91	90	93	97	95	100
	1	100	100	100	100	100	100	100	100	100
4.2	5	23	30	13	12	15	7	6	10	0
	4	54	40	73	35	40	29	38	55	14
	3	86	80	93	56	60	50	82	85	79
	2	97	100	93	91	90	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
4.3	5	20	25	13	3	5	0	11	20	0
	4	54	60	47	23	30	13	46	60	27
	3	86	80	93	43	50	33	94	90	100
	2	97	95	100	89	90	87	100	100	100
	1	100	100	100	100	100	100	100	100	100
5.1	5	31	40	20	14	5	27	14	25	0
	4	69	70	67	34	30	40	49	75	13
	3	91	90	93	74	65	87	77	90	60
	2	97	100	93	100	100	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
5.2	5	29	40	13	17	15	20	17	30	0
	4	89	90	87	43	30	60	51	80	13
	3	97	95	100	74	65	87	71	90	47
	2	100	100	100	97	95	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
5.3	5	34	30	40	6	0	13	9	15	0
	4	89	85	93	37	20	60	46	65	20
	3	97	95	100	66	50	87	77	95	53
	2	97	95	100	97	95	100	100	100	100
	1	100	100	100	100	100	100	100	100	100

Appendix 12 – Continued

Competency	Response	Importance			Difficulty			Preparedness		
		All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)
6.1	5	53	55	50	6	10	0	29	40	14
	4	91	90	93	21	25	14	74	85	57
	3	100	100	100	47	40	57	88	90	86
	2	100	100	100	94	95	93	97	95	100
	1	100	100	100	100	100	100	100	100	100
6.2	5	15	10	21	9	15	0	9	5	14
	4	50	40	64	26	30	21	53	65	36
	3	91	90	93	50	50	50	79	95	57
	2	97	100	93	94	100	86	100	100	100
	1	100	100	100	100	100	100	100	100	100
6.3	5	53	60	43	18	20	14	18	30	0
	4	91	95	86	47	35	64	47	70	14
	3	100	100	100	76	75	79	74	95	43
	2	100	100	100	100	100	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
6.4	5	52	55	46	6	5	8	30	45	8
	4	82	85	77	27	25	31	64	80	38
	3	97	95	100	70	55	92	85	90	77
	2	100	100	100	94	90	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
7.1	5	59	55	64	21	25	14	24	35	7
	4	100	100	100	50	50	50	59	75	36
	3	100	100	100	79	70	93	88	100	71
	2	100	100	100	91	85	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
7.2	5	68	60	79	41	45	36	18	30	0
	4	97	100	93	53	50	57	44	50	36
	3	100	100	100	82	75	93	82	95	64
	2	100	100	100	100	100	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
7.3	5	26	30	21	6	5	7	9	15	0
	4	68	60	79	12	15	7	50	70	21
	3	97	95	100	56	50	64	85	90	79
	2	100	100	100	100	100	100	97	100	93
	1	100	100	100	100	100	100	100	100	100
7.4	5	44	50	36	21	20	21	21	30	7
	4	76	75	79	59	55	64	47	65	21
	3	94	90	100	74	65	86	79	90	64
	2	100	100	100	97	95	100	97	95	100
	1	100	100	100	100	100	100	100	100	100
8.1	5	14	15	13	0	0	0	17	20	13
	4	34	40	27	11	20	0	57	65	47
	3	86	85	87	34	40	27	97	95	100
	2	100	100	100	80	75	87	100	100	100
	1	100	100	100	100	100	100	100	100	100

Appendix 12 – Continued

Competency	Response	Importance			Difficulty			Preparedness		
		All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)
8.2	5	65	70	57	3	0	7	32	50	7
	4	91	100	79	6	5	7	79	95	57
	3	100	100	100	12	5	21	94	95	93
	2	100	100	100	67	63	71	97	95	100
	1	100	100	100	100	100	100	100	100	100
8.3	5	15	15	14	3	5	0	18	25	7
	4	62	55	71	6	10	0	65	80	43
	3	88	80	100	24	20	29	91	90	93
	2	100	100	100	82	75	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
9.1	5	44	50	36	0	0	0	32	45	14
	4	85	85	86	15	15	14	71	90	43
	3	100	100	100	41	30	57	100	100	100
	2	100	100	100	85	80	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
9.2	5	21	25	14	3	0	7	21	25	14
	4	71	65	79	18	15	21	62	85	29
	3	88	85	93	62	55	71	91	95	86
	2	100	100	100	88	85	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
9.3	5	18	20	14	0	0	0	15	20	7
	4	74	80	64	18	20	14	53	80	14
	3	100	100	100	74	65	86	91	100	79
	2	100	100	100	94	90	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
9.4	5	3	5	0	6	5	7	9	15	0
	4	35	20	57	38	30	50	38	60	7
	3	82	75	93	65	50	86	62	80	36
	2	100	100	100	97	95	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
10.1	5	32	40	21	24	20	29	18	25	7
	4	91	100	79	59	45	79	56	70	36
	3	97	100	93	85	85	86	76	90	57
	2	100	100	100	97	95	100	97	100	93
	1	100	100	100	100	100	100	100	100	100
10.2	5	62	60	64	18	10	29	24	35	7
	4	100	100	100	53	45	64	59	75	36
	3	100	100	100	88	85	93	82	95	64
	2	100	100	100	97	95	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
10.3	5	38	30	50	12	5	21	12	15	7
	4	85	75	100	47	40	57	44	60	21
	3	97	95	100	85	85	86	71	90	43
	2	100	100	100	94	95	93	94	100	86
	1	100	100	100	100	100	100	100	100	100

Appendix 12 – Continued

Competency	Response	Importance			Difficulty			Preparedness		
		All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)
11.1	5	26	25	29	12	5	21	12	15	7
	4	91	90	93	53	50	57	56	85	14
	3	100	100	100	88	80	100	79	100	50
	2	100	100	100	100	100	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
11.2	5	38	50	21	9	5	14	15	25	0
	4	94	90	100	32	20	50	74	100	36
	3	100	100	100	68	55	86	97	100	93
	2	100	100	100	97	95	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
11.3	5	9	15	0	21	30	7	12	15	7
	4	53	60	43	44	55	29	53	65	36
	3	85	75	100	85	90	79	85	85	86
	2	94	90	100	100	100	100	97	100	93
	1	100	100	100	100	100	100	100	100	100
11.4	5	26	30	21	0	0	0	29	45	7
	4	74	80	64	26	25	29	68	80	50
	3	97	100	93	56	45	71	94	95	93
	2	100	100	100	91	90	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
12.1	5	29	30	29	9	0	21	18	30	0
	4	88	85	93	35	20	57	35	60	0
	3	100	100	100	68	55	86	79	90	64
	2	100	100	100	94	90	100	97	100	93
	1	100	100	100	100	100	100	100	100	100
12.2	5	18	20	14	6	0	14	21	35	0
	4	79	85	71	29	15	50	53	70	29
	3	100	100	100	65	50	86	91	95	86
	2	100	100	100	91	85	100	97	100	93
	1	100	100	100	100	100	100	100	100	100
12.3	5	41	40	43	9	0	21	18	30	0
	4	88	85	93	35	15	64	56	70	36
	3	94	90	100	71	65	79	91	95	86
	2	100	100	100	91	90	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
13.1	5	38	50	21	0	0	0	21	30	7
	4	88	90	86	12	10	14	79	85	71
	3	100	100	100	41	45	36	88	90	86
	2	100	100	100	79	75	86	100	100	100
	1	100	100	100	100	100	100	100	100	100
13.2	5	24	20	31	3	0	8	12	15	8
	4	82	85	77	15	20	8	61	75	38
	3	94	90	100	58	65	46	82	85	77
	2	100	100	100	88	90	85	100	100	100
	1	100	100	100	100	100	100	100	100	100

Appendix 12 – Continued

Competency	Response	Importance			Difficulty			Preparedness		
		All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)
13.3	5	41	50	29	6	0	14	12	20	0
	4	97	95	100	18	20	14	53	70	29
	3	100	100	100	56	40	79	94	95	93
	2	100	100	100	91	85	100	100	100	100
	1	100	100	100	100	100	100	100	100	100
13.4	5	24	30	14	3	0	7	21	30	7
	4	56	65	43	32	30	36	56	75	29
	3	88	95	79	68	60	79	85	100	64
	2	97	100	93	94	90	100	97	100	93
	1	100	100	100	100	100		100	100	100
13.5	5	35	45	21	6	5	7	26	40	7
	4	79	90	64	32	25	43	59	80	29
	3	91	95	86	65	60	71	79	90	64
	2	97	100	93	91	90	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
14.1	5	32	35	29	0	0	0	29	40	14
	4	82	85	79	12	15	7	68	75	57
	3	97	100	93	29	25	36	85	85	86
	2	100	100	100	79	85	71	100	100	100
	1	100	100	100	100	100	100	100	100	100
14.2	5	29	30	29	0	0	0	15	25	0
	4	82	75	93	24	15	36	50	70	21
	3	91	90	93	47	40	57	79	90	64
	2	97	100	93	88	90	86	100	100	100
	1	100	100	100	100	100	100	100	100	100
14.3	5	38	45	29	3	5	0	21	30	7
	4	91	95	86	12	10	14	65	75	50
	3	100	100	100	44	35	57	85	90	79
	2	100	100	100	76	75	79	100	100	100
	1	100	100	100	100	100	100	100	100	100
15.1	5	50	55	43	9	10	7	39	50	23
	4	91	95	86	18	10	29	76	90	54
	3	97	95	100	35	25	50	94	95	92
	2	100	100	100	71	55	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
15.2	5	58	65	46	3	5	0	26	35	14
	4	94	90	100	24	15	38	68	85	43
	3	100	100	100	39	30	54	88	85	93
	2	100	100	100	76	70	85	100	100	100
	1	100	100	100	100	100	100	100	100	100
15.3	5	38	40	36	6	5	7	35	55	7
	4	91	90	93	32	20	50	79	95	57
	3	97	95	100	50	40	64	91	95	86
	2	100	100	100	79	75	86	97	100	93
	1	100	100	100	100	100	100	100	100	100

Appendix 12 – Continued

Competency	Response	Importance			Difficulty			Preparedness		
		All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)	All (%)	Students (%)	Staff (%)
15.4	5	50	60	36	3	5	0	14	15	13
	4	94	95	93	12	5	21	60	75	40
	3	97	95	100	32	20	50	89	95	80
	2	100	100	100	68	55	86	100	100	100
	1	100	100	100	100	100	100	100	100	100
16.1	5	59	50	71	3	0	7	12	10	14
	4	97	100	93	18	10	29	53	65	36
	3	100	100	100	38	30	50	94	95	93
	2	100	100	100	82	75	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
16.2	5	21	30	7	3	5	0	21	25	14
	4	74	75	71	29	25	36	62	80	36
	3	100	100	100	53	50	57	88	100	71
	2	100	100	100	91	90	93	100	100	100
	1	100	100	100	100	100	100	100	100	100
16.3	5	24	35	7	3	0	7	15	15	14
	4	71	65	79	26	15	43	44	50	36
	3	97	95	100	53	50	57	76	85	64
	2	100	100	100	88	85	93	97	100	93
	1	100	100	100	100	100	100	100	100	100
16.4	5	18	30	0	9	5	14	15	15	14
	4	44	45	43	32	30	36	44	50	36
	3	79	80	79	74	70	79	76	85	64
	2	97	95	100	91	90	93	97	100	93
	1	100	100	100	100	100	100	100	100	100

Appendix 13 – Importance Rankings using Frequency Analysis

Competency		Cumulative Percentage	Rank
2.1	identifies the requirements necessary to complete a task (1)	100	1
10.2	able to distinguish between relevant and irrelevant items (2)	100	1
2.2	plans an appropriate strategy to undertake a task (1)	97	3
7.1	prioritises competing tasks within the time available (1)	97	3
7.2	balances work, social, family and study commitments (1)	97	3
13.3	selects the appropriate technology tool for the task at hand (1)	97	3
16.1	reads and writes at an appropriate level (2)	97	3
3.2	provides responses in clear, concise and unambiguous language (3)	94	8
11.2	forms connections between prior knowledge and new knowledge (2)	94	8
15.2	uses search engines effectively (1)	94	8
15.4	downloads and uploads information and resources (1)	94	8
6.1	seeks information through either own enquiries or the questioning of others (3)	91	12
6.3	identifies and rectifies gaps in one's own understanding (2)	91	12
8.2	responds to others with respect (3)	91	12
10.1	able to navigate large bodies of content (2)	91	12
11.1	develops responses which synthesise a range of ideas (2)	91	12
14.3	asks for guidance or seek clarification for misunderstandings (3)	91	12
15.1	uses a web browser with skill and purpose (1)	91	12
15.3	searches the Internet strategically (1)	91	12
5.2	evaluates a set of search results critically (2)	89	20
5.3	critiques a web site in relation to content (2)	89	20
12.1	willing to have ideas challenged (3)	88	22
12.3	uses feedback to evaluate own performance (self critique) (1)	88	22
13.1	demonstrates knowledge and use of the Learning Management System (1)	88	22
9.1	views oneself positively as a learner (1)	85	25
10.3	cross references between sources to determine accuracy (2)	85	25
1.2	adapts learning style to the e-learning environment (1)	83	27
2.3	uses problem solving strategies (1)	83	27
6.4	undertakes set tasks independently (1)	82	29
13.2	makes allowances for the virtual nature of the learning environment (1)	82	29
14.1	acknowledges the facilitation role of lecturer in the learning environment (3)	82	31
14.2	recognises lecturer's response as a contribution and not the final word on an issue (3)	82	31
12.2	considers and acts upon feedback from members of the learning community (3)	79	33
13.5	employs a logical process to identify and solve a computer problem (1)	79	33
3.1	uses inter-personal communication skills (3)	77	35
3.4	applies the rules of netiquette consistently (3)	77	35
7.4	works to a disciplined timeframe (1)	76	37
1.3	uses technology to support own learning style (1)	74	38
9.3	justifies own stance on an issue (3)	74	39
11.4	uses technology to assist in the construction of knowledge (1)	74	39
16.2	accesses information from a variety of sources (e.g. web pages, podcasts) (2)	74	39
2.4	engages in the process of reflection (1)	71	42
9.2	contributes new ideas to a discussion (3)	71	43
16.3	extracts information from a variety of formats (2)	71	43
1.1	understands own cognitive processes and thinking strategies (1)	69	45
5.1	critiques the responses of others constructively (3)	69	45
7.3	anticipates and makes allowances for "wait time" in asynchronous discussions (1)	68	47
3.3	determines when it's time to 'listen' to or contribute a response (3)	63	48
8.3	views oneself as a member of the learning community (3)	62	49
4.1	arranges schedule to allow for regular online sessions (3)	57	50
13.4	integrates a variety of software applications to create a product (1)	56	51
4.2	seeks interaction with other members of the learning community (3)	54	52
4.3	encourages others to post through positive responses (3)	54	52
11.3	works with others to collaboratively construct knowledge (3)	53	54
6.2	goes outside the technology and learning community to seek information (2)	50	55
16.4	presents information in a variety of formats (video, audio, etc) (2)	44	56
9.4	comments upon or critiques a response made by the lecturer (3)	35	57
8.1	shares personal experiences in responses when relating to topic and others (3)	34	58

Note: this table has been divided roughly into quarters simply to improve readability.

Appendix 14 – Difficulty Rankings using Frequency Analysis

Competency		Cumulative Percentage	Rank
7.4	works to a disciplined timeframe (1)	59	1
10.1	able to navigate large bodies of content (2)	59	1
7.2	balances work, social, family and study commitments (1)	53	3
10.2	able to distinguish between relevant and irrelevant items (2)	53	3
11.1	develops responses which synthesise a range of ideas (2)	53	3
7.1	prioritises competing tasks within the time available (1)	50	6
1.2	adapts learning style to the e-learning environment (1)	49	7
6.3	identifies and rectifies gaps in one's own understanding (2)	47	8
10.3	cross references between sources to determine accuracy (2)	47	8
1.1	understands own cognitive processes and thinking strategies (1)	46	10
11.3	works with others to collaboratively construct knowledge (3)	44	11
5.2	evaluates a set of search results critically (2)	43	12
4.1	arranges schedule to allow for regular online sessions (3)	38	13
9.4	comments upon or critiques a response made by the lecturer (3)	38	13
5.3	critiques a web site in relation to content (2)	37	15
4.2	seeks interaction with other members of the learning community (3)	35	16
12.1	willing to have ideas challenged (3)	35	16
12.3	uses feedback to evaluate own performance (self critique) (1)	35	16
5.1	critiques the responses of others constructively (3)	34	19
11.2	forms connections between prior knowledge and new knowledge (2)	32	20
13.4	integrates a variety of software applications to create a product (1)	32	20
13.5	employs a logical process to identify and solve a computer problem (1)	32	20
15.3	searches the Internet strategically (1)	32	20
16.4	presents information in a variety of formats (video, audio, etc) (2)	32	20
1.3	uses technology to support own learning style (1)	31	25
3.2	provides responses in clear, concise and unambiguous language (3)	29	26
12.2	considers and acts upon feedback from members of the learning community (3)	29	26
16.2	accesses information from a variety of sources (e.g. web pages, podcasts) (2)	29	26
6.4	undertakes set tasks independently (1)	27	29
2.3	uses problem solving strategies (1)	26	30
2.4	engages in the process of reflection (1)	26	30
6.2	goes outside the technology and learning community to seek information (2)	26	30
11.4	uses technology to assist in the construction of knowledge (1)	26	30
16.3	extracts information from a variety of formats (2)	26	30
14.2	recognises lecturer's response as a contribution and not the final word on an issue (3)	24	35
15.2	uses search engines effectively (1)	24	35
2.2	plans an appropriate strategy to undertake a task (1)	23	37
4.3	encourages others to post through positive responses (3)	23	37
6.1	seeks information through either own enquiries or the questioning of others (3)	21	39
2.1	identifies the requirements necessary to complete a task (1)	20	40
3.1	uses inter-personal communication skills (3)	20	40
9.2	contributes new ideas to a discussion (3)	18	42
9.3	justifies own stance on an issue (3)	18	42
13.3	selects the appropriate technology tool for the task at hand (1)	18	42
15.1	uses a web browser with skill and purpose (1)	18	42
16.1	reads and writes at an appropriate level (2)	18	42
3.3	determines when it's time to 'listen' to or contribute a response (3)	17	47
9.1	views oneself positively as a learner (1)	15	48
13.2	makes allowances for the virtual nature of the learning environment (1)	15	48
7.3	anticipates and makes allowances for "wait time" in asynchronous discussions (1)	12	50
13.1	demonstrates knowledge and use of the Learning Management System (1)	12	50
14.1	acknowledges the facilitation role of lecturer in the learning environment (3)	12	50
14.3	asks for guidance or seek clarification for misunderstandings (3)	12	50
15.4	downloads and uploads information and resources (1)	12	50
8.1	shares personal experiences in responses when relating to topic and others (3)	11	55
3.4	applies the rules of netiquette consistently (3)	9	56
8.2	responds to others with respect (3)	6	57
8.3	views oneself as a member of the learning community (3)	6	58

Note: this table has been divided roughly into quarters simply to improve readability.

Appendix 15 – Preparedness Rankings using Frequency Analysis

Competency		Cumulative Percentage	Rank
15.1	uses a web browser with skill and purpose (1)	85	1
8.2	responds to others with respect (3)	79	2
13.1	demonstrates knowledge and use of the Learning Management System (1)	79	2
15.4	downloads and uploads information and resources (1)	79	2
15.2	uses search engines effectively (1)	76	5
6.1	seeks information through either own enquiries or the questioning of others (3)	74	6
11.2	forms connections between prior knowledge and new knowledge (2)	74	6
9.1	views oneself positively as a learner (1)	71	8
11.4	uses technology to assist in the construction of knowledge (1)	68	9
14.1	acknowledges the facilitation role of lecturer in the learning environment (3)	68	9
15.3	searches the Internet strategically (1)	68	9
16.1	reads and writes at an appropriate level (2)	68	9
3.4	applies the rules of netiquette consistently (3)	66	13
8.3	views oneself as a member of the learning community (3)	65	14
14.3	asks for guidance or seek clarification for misunderstandings (3)	65	14
6.4	undertakes set tasks independently (1)	64	16
2.3	uses problem solving strategies (1)	63	17
3.1	uses inter-personal communication skills (3)	63	17
9.2	contributes new ideas to a discussion (3)	62	19
16.3	extracts information from a variety of formats (2)	62	19
13.2	makes allowances for the virtual nature of the learning environment (1)	61	21
1.3	uses technology to support own learning style (1)	60	22
2.1	identifies the requirements necessary to complete a task (1)	60	22
7.1	prioritises competing tasks within the time available (1)	59	24
10.2	able to distinguish between relevant and irrelevant items (2)	59	24
13.5	employs a logical process to identify and solve a computer problem (1)	59	24
3.2	provides responses in clear, concise and unambiguous language (3)	57	27
8.1	shares personal experiences in responses when relating to topic and others (3)	57	27
3.3	determines when it's time to 'listen' to or contribute a response (3)	56	29
10.1	able to navigate large bodies of content (2)	56	29
11.1	develops responses which synthesise a range of ideas (2)	56	29
12.3	uses feedback to evaluate own performance (self critique) (1)	56	29
13.4	integrates a variety of software applications to create a product (1)	56	29
6.2	goes outside the technology and learning community to seek information (2)	53	34
9.3	justifies own stance on an issue (3)	53	34
11.3	works with others to collaboratively construct knowledge (3)	53	34
12.2	considers and acts upon feedback from members of the learning community (3)	53	34
13.3	selects the appropriate technology tool for the task at hand (1)	53	34
16.2	accesses information from a variety of sources (e.g. web pages, podcasts) (2)	53	34
2.2	plans an appropriate strategy to undertake a task (1)	51	40
5.2	evaluates a set of search results critically (2)	51	40
7.3	anticipates and makes allowances for "wait time" in asynchronous discussions (1)	50	42
14.2	recognises lecturer's response as a contribution and not the final word on an issue (3)	50	42
1.2	adapts learning style to the e-learning environment (1)	49	44
5.1	critiques the responses of others constructively (3)	49	44
6.3	identifies and rectifies gaps in one's own understanding (2)	47	46
7.4	works to a disciplined timeframe (1)	47	46
2.4	engages in the process of reflection (1)	46	48
4.3	encourages others to post through positive responses (3)	46	48
5.3	critiques a web site in relation to content (2)	46	48
7.2	balances work, social, family and study commitments (1)	44	51
10.3	cross references between sources to determine accuracy (2)	44	51
16.4	presents information in a variety of formats (video, audio, etc) (2)	44	51
4.2	seeks interaction with other members of the learning community (3)	38	54
9.4	comments upon or critiques a response made by the lecturer (3)	38	54
12.1	willing to have ideas challenged (3)	35	56
4.1	arranges schedule to allow for regular online sessions (3)	32	57
1.1	understands own cognitive processes and thinking strategies (1)	31	58

Note: this table has been divided roughly into quarters simply to improve readability.

Appendix 16 – Rasch Item Estimates for Importance Data

Name	Measure	Infit Msq	Infit *t*	Outfit Msq	Outfit *t*
C1.1i	0.17	0.95	-0.16	0.95	-0.16
C1.2i	0.62	1.03	0.2	1.21	0.9
C1.3i	0.06	0.9	-0.62	0.98	-0.05
C2.1i	0.8	0.98	-0.02	0.97	-0.08
C2.2i	1.25	0.88	-0.57	0.86	-0.69
C2.3i	0.68	0.8	-0.84	0.75	-1.07
C2.4i	0.34	0.84	-0.75	0.83	-0.77
C3.1i	0.51	0.92	-0.3	0.85	-0.56
C3.2i	0.8	0.87	-0.63	0.85	-0.72
C3.3i	0.15	0.94	-0.28	0.93	-0.29
C3.4i	0.49	1.13	0.64	1.19	0.83
C4.1i	0.39	1.17	0.92	1.15	0.76
C4.2i	0.3	0.93	-0.25	0.95	-0.17
C4.3i	0.26	0.96	-0.13	0.96	-0.11
C5.1i	0.42	1.13	0.58	1.13	0.56
C5.2i	0.56	0.93	-0.16	0.9	-0.25
C5.3i	0.47	1.13	0.45	1.4	1.04
C6.1i	0.68	0.85	-0.66	0.8	-0.91
C6.2i	0.19	1.22	0.9	1.25	0.99
C6.3i	0.68	0.8	-0.96	0.75	-1.17
C6.4i	0.76	1.14	0.65	1.52	1.83
C7.1i	0.09	0.92	-1.01	0.9	-1.08
C7.2i	1.38	0.97	-0.04	0.92	-0.2
C7.3i	0.51	0.96	-0.15	0.96	-0.15
C7.4i	0.48	0.76	-1.12	0.74	-1.12
C8.1i	-0.32	1.15	0.75	1.1	0.52
C8.2i	0.79	0.97	-0.05	0.98	0.04
C8.3i	-0.19	0.87	-0.56	0.88	-0.51
C9.1i	0.31	0.91	-0.41	0.89	-0.53
C9.2i	-0.05	0.85	-0.66	0.83	-0.7
C9.3i	-0.49	0.93	-0.29	0.93	-0.32
C9.4i	-0.92	1.06	0.35	1.06	0.33
C10.1i	0.61	0.96	-0.04	0.95	-0.05
C10.2i	0.22	0.97	-0.3	0.96	-0.3
C10.3i	0.67	1.02	0.18	1.08	0.4
C11.1i	0.29	0.89	-0.43	0.89	-0.43
C11.2i	0.7	0.8	-0.98	0.8	-0.99
C11.3i	-0.13	0.88	-0.42	0.91	-0.25
C11.4i	0.51	1	0.05	1.03	0.21
C12.1i	0.2	0.92	-0.33	0.92	-0.31
C12.2i	-0.36	0.92	-0.29	0.92	-0.29
C12.3i	0.46	0.85	-0.43	0.79	-0.63
C13.1i	0.35	0.9	-0.47	0.93	-0.28
C13.2i	0.24	1.18	0.7	1.39	1.34
C13.3i	1.09	0.87	-0.69	0.87	-0.69
C13.4i	0.32	1	0.07	1	0.07
C13.5i	0.47	0.92	-0.17	0.86	-0.38
C14.1i	0.6	0.91	-0.3	0.9	-0.34
C14.2i	0.42	1.05	0.27	1.39	1.17
C14.3i	0.49	0.96	-0.13	0.95	-0.2
C15.1i	0.78	0.85	-0.43	0.75	-0.77
C15.2i	0.91	0.93	-0.23	0.89	-0.39
C15.3i	0.67	0.89	-0.28	0.83	-0.51
C15.4i	0.78	0.87	-0.27	0.84	-0.41
C16.1i	1.29	0.94	-0.23	0.9	-0.41
C16.2i	-0.41	0.91	-0.41	0.91	-0.43
C16.3i	0.47	0.96	-0.12	0.96	-0.11
C16.4i	0.21	0.85	-0.7	0.85	-0.68

Appendix 16 – Rasch Item Estimates for Difficulty Data

Name	Measure	Infit Msq	Infit t	Outfit Msq	Outfit t
C1.1d	-0.54	1.02	0.15	1.02	0.15
C1.2d	0.1	1.01	0.12	1	0.08
C1.3d	-0.3	1.17	0.81	1.16	0.77
C2.1d	0.16	0.9	-0.44	0.89	-0.45
C2.2d	-0.49	0.92	-0.27	0.92	-0.28
C2.3d	-0.3	0.92	-0.27	0.92	-0.28
C2.4d	-0.7	1	0.08	1.01	0.1
C3.1d	-0.74	0.98	-0.01	1	0.05
C3.2d	-0.31	0.92	-0.33	0.92	-0.34
C3.3d	-0.51	0.89	-0.4	0.87	-0.49
C3.4d	-0.62	1	0.08	0.98	0
C4.1d	-0.16	1.1	0.57	1.08	0.47
C4.2d	-0.24	0.85	-0.74	0.83	-0.83
C4.3d	-0.7	0.84	-0.76	0.81	-0.84
C5.1d	-0.53	0.93	-0.32	0.92	-0.35
C5.2d	0.19	1.06	0.35	1.05	0.33
C5.3d	-0.12	1.04	0.26	1.04	0.24
C6.1d	-0.33	0.93	-0.22	0.9	-0.31
C6.2d	-0.21	0.83	-0.76	0.8	-0.86
C6.3d	-0.38	0.95	-0.23	0.96	-0.18
C6.4d	-0.3	1.04	0.24	1.04	0.23
C7.1d	-0.02	1.13	0.66	1.22	1.02
C7.2d	0.04	1.14	0.86	1.21	1.14
C7.3d	-1.06	1.02	0.18	0.93	-0.15
C7.4d	0.27	1.21	1.08	1.31	1.45
C8.1d	-0.51	1.12	0.63	1.11	0.58
C8.2d	-1.05	1.21	0.66	1.15	0.5
C8.3d	-0.85	1.09	0.36	0.9	-0.2
C9.1d	-0.29	1.19	0.94	1.17	0.87
C9.2d	-0.67	1.2	0.92	1.2	0.92
C9.3d	0.13	1.05	0.28	1.09	0.45
C9.4d	-0.1	1.17	0.93	1.17	0.87
C10.1d	0.32	1.18	0.83	1.24	1.07
C10.2d	0.24	1.17	0.75	1.24	1.01
C10.3d	-0.06	0.96	-0.07	0.99	0.06
C11.1d	-0.28	0.99	0.04	0.99	0.04
C11.2d	0	1.05	0.3	1.02	0.18
C11.3d	-0.17	0.76	-1.34	0.75	-1.37
C11.4d	0.12	1.09	0.51	1.09	0.54
C12.1d	-0.17	1.25	1.18	1.25	1.19
C12.2d	-0.4	1.18	0.87	1.18	0.87
C12.3d	-0.27	1.28	1.27	1.27	1.25
C13.1d	-0.49	1.29	1.42	1.26	1.29
C13.2d	-0.69	1.14	0.63	1.12	0.57
C13.3d	-0.42	1.14	0.63	1.09	0.43
C13.4d	-0.46	1.17	0.83	1.18	0.86
C13.5d	-0.39	1.08	0.46	1.08	0.46
C14.1d	-0.51	1.03	0.2	0.98	-0.02
C14.2d	-0.04	1.17	0.93	1.16	0.88
C14.3d	-0.89	1.07	0.39	1.05	0.29
C15.1d	-0.67	1.35	1.45	1.32	1.21
C15.2d	-0.88	1.15	0.79	1.12	0.62
C15.3d	-0.63	1.22	1.16	1.21	1.08
C15.4d	-1	1.28	1.16	1.27	1.11
C16.1d	-0.81	1.09	0.45	1.11	0.53
C16.2d	-0.59	1.03	0.19	1	0.08
C16.3d	-0.67	1.16	0.84	1.14	0.71
C16.4d	-0.27	1.21	0.95	1.22	0.99

Appendix 16 – Rasch Item Estimates for Preparedness Data

Name	Measure	Infit Msq	Infit *t*	Outfit Msq	Outfit *t*
C1.1p	-0.53	0.94	-0.25	0.9	-0.4
C1.2p	0.12	1.11	0.46	1.16	0.64
C1.3p	0.16	0.97	-0.07	0.96	-0.12
C2.1p	0.11	0.87	-0.65	0.87	-0.67
C2.2p	-0.23	0.81	-0.98	0.81	-0.99
C2.3p	-0.03	0.89	-0.48	0.89	-0.44
C2.4p	-0.44	0.92	-0.37	0.91	-0.4
C3.1p	0.39	1.01	0.11	1	0.08
C3.2p	-0.03	0.97	-0.12	0.95	-0.2
C3.3p	-0.18	0.89	-0.43	0.89	-0.45
C3.4p	0.36	1.03	0.19	1.02	0.18
C4.1p	-0.12	0.98	-0.01	0.97	-0.04
C4.2p	-0.7	0.94	-0.22	0.95	-0.16
C4.3p	-0.06	0.99	0.05	0.98	0.01
C5.1p	-0.46	1.06	0.36	1.06	0.37
C5.2p	-0.48	1	0.03	1	0.08
C5.3p	-0.65	1.07	0.41	1.08	0.46
C6.1p	0.4	0.96	-0.06	0.98	0.01
C6.2p	-0.57	1.11	0.63	1.1	0.54
C6.3p	-0.43	1	0.07	1	0.04
C6.4p	-0.02	1.18	0.95	1.26	1.24
C7.1p	-0.02	0.96	-0.15	0.94	-0.23
C7.2p	-0.29	1	0.09	1	0.07
C7.3p	0.04	1.05	0.28	1.04	0.26
C7.4p	0.26	0.84	-0.76	0.85	-0.71
C8.1p	0.33	1	0.05	0.98	-0.01
C8.2p	0.44	1.07	0.31	1.22	0.76
C8.3p	-0.02	0.85	-0.64	0.85	-0.64
C9.1p	-0.23	0.98	-0.07	0.97	-0.16
C9.2p	0.03	0.86	-0.64	0.85	-0.68
C9.3p	-0.1	0.93	-0.28	0.93	-0.29
C9.4p	-0.82	1.16	0.9	1.21	1.13
C10.1p	0.23	0.99	0.02	0.97	-0.1
C10.2p	-0.16	1.03	0.2	1.01	0.12
C10.3p	-0.08	0.89	-0.52	0.89	-0.5
C11.1p	-0.47	0.85	-0.79	0.85	-0.76
C11.2p	0.3	0.92	-0.24	0.94	-0.18
C11.3p	0.12	1.13	0.61	1.18	0.79
C11.4p	0.31	0.99	0.02	1	0.06
C12.1p	0.2	1.05	0.29	1.05	0.3
C12.2p	0.28	1.08	0.4	1.09	0.47
C12.3p	-0.03	0.96	-0.14	0.96	-0.11
C13.1p	-0.04	1.06	0.33	1.1	0.46
C13.2p	-0.41	1.13	0.7	1.19	0.9
C13.3p	-0.04	0.92	-0.29	0.92	-0.31
C13.4p	0.28	0.96	-0.09	0.95	-0.17
C13.5p	-0.17	0.81	-1.07	0.79	-1.14
C14.1p	0	1.09	0.49	1.09	0.49
C14.2p	-0.4	1.17	0.91	1.18	0.97
C14.3p	-0.14	1.06	0.36	1.04	0.24
C15.1p	0.26	1	0.08	1.03	0.21
C15.2p	0.42	1.04	0.25	1.03	0.2
C15.3p	0.03	0.94	-0.24	0.94	-0.21
C15.4p	0.47	0.85	-0.45	0.79	-0.65
C16.1p	-0.04	0.99	0.02	0.99	0.01
C16.2p	-0.04	1.03	0.2	1.02	0.17
C16.3p	-0.07	0.95	-0.17	0.95	-0.19
C16.4p	0.16	0.93	-0.28	0.92	-0.32

Appendix 17 – Cook's Distance Values for Perspective Differences

Competency	Importance v. Difficulty	Importance v. Preparedness	Difficulty v. Preparedness
1.1	0.00357	0.02517	0.03053
1.2	0.0209	0.00229	0.01667
1.3	0.00022	0.01048	0.00461
2.1	0.04174	0.00199	0.01995
2.2	0.00186	0.04444	0.00429
2.3	0.00072	0.00004	0.00008
2.4	0.00866	0.01394	0.03698
3.1	0.01038	0.01767	0.02991
3.2	0.00092	0.00019	0.00007
3.3	0.00269	0.00122	0.00264
3.4	0.00467	0.01518	0.0196
4.1	0.00305	0.00044	0.00018
4.2	0.00109	0.04036	0.04202
4.3	0.00985	0.00001	0.00082
5.1	0.00196	0.01577	0.02203
5.2	0.0262	0.02116	0.04253
5.3	0.00463	0.035	0.04486
6.1	0.0003	0.02229	0.01932
6.2	0.00186	0.02894	0.02768
6.3	0	0.02273	0.01369
6.4	0.00099	0.00005	0.00015
7.1	0.01235	0.00076	0.00138
7.2	0.12073	0.09446	0.00714
7.3	0.03631	0.00056	0.00034
7.4	0.03065	0.00852	0.07826
8.1	0.01216	0.09298	0.01378
8.2	0.05796	0.03262	0.07478
8.3	0.06527	0.00354	0.00076
9.1	0.00037	0.00277	0.00279
9.2	0.01879	0.00415	0.00014
9.3	0.08975	0.00282	0.00026
9.4	0.03557	0.51939	0.08
10.1	0.04355	0.0072	0.08072
10.2	0.0312	0.00083	0.00007
10.3	0.01051	0.00055	0.00006
11.1	0.00048	0.01656	0.01639
11.2	0.01597	0.01317	0.03411
11.3	0.00515	0.01499	0.00497
11.4	0.01862	0.01165	0.05683
12.1	0.00303	0.00897	0.00973
12.2	0.00266	0.08376	0.00975
12.3	0.00072	0.00001	0.00012
13.1	0.00123	0.00003	0.00002
13.2	0.00967	0.01248	0.03095
13.3	0.00002	0.00237	0
13.4	0.00077	0.01131	0.00977
13.5	0.00003	0.00157	0.00147
14.1	0.00151	0.00006	0.00007
14.2	0.00777	0.01152	0.01613
14.3	0.0203	0.00099	0.01047
15.1	0.01017	0.01117	0.01132
15.2	0.04172	0.03718	0.04774
15.3	0.00613	0.00025	0.00019
15.4	0.04839	0.03653	0.07887
16.1	0.0661	0.00661	0.00108
16.2	0.03119	0.007	0.00011
16.3	0.0067	0.00008	0.00086
16.4	0.00061	0.00637	0.00502

Appendix 18 – Rank-order Differentials for Importance – Difficulty

Competency	Importance Ranking	Difficulty Ranking	Differential
1.1	47	41	6
1.2	18	8	10
1.3	50	25	25
2.1	6	5	1
2.2	3	35	32
2.3	13	25	12
2.4	36	49	13
3.1	22	51	29
3.2	6	28	22
3.3	48	37	11
3.4	26	43	17
4.1	34	16	18
4.2	38	20	18
4.3	41	49	8
5.1	32	40	8
5.2	21	4	17
5.3	27	15	12
6.1	13	29	16
6.2	46	19	27
6.3	13	30	17
6.4	11	25	14
7.1	49	11	38
7.2	1	9	8
7.3	24	58	34
7.4	27	2	25
8.1	54	37	17
8.2	8	57	49
8.3	53	53	0
9.1	38	24	14
9.2	51	45	6
9.3	57	6	51
9.4	58	14	44
10.1	18	1	17
10.2	43	3	40
10.3	17	13	4
11.1	40	23	17
11.2	12	10	2
11.3	52	17	35
11.4	22	7	15
12.1	45	17	28
12.2	55	32	23
12.3	29	21	8
13.1	35	35	0
13.2	42	48	6
13.3	4	33	29
13.4	37	34	3
13.5	29	31	2
14.1	20	37	17
14.2	32	12	20
14.3	25	54	29
15.1	10	45	35
15.2	5	54	49
15.3	13	44	31
15.4	9	56	47
16.1	2	52	50
16.2	56	42	14
16.3	29	45	16
16.4	43	21	22

Appendix 19 – Rank-order Differentials for Importance – Preparedness

Competency	Importance Ranking	Preparedness Ranking	Differential
1.1	47	55	8
1.2	18	19	1
1.3	50	18	32
2.1	6	20	14
2.2	3	45	42
2.3	13	27	14
2.4	36	49	13
3.1	22	5	17
3.2	6	29	23
3.3	48	44	4
3.4	26	7	19
4.1	34	39	5
4.2	38	57	19
4.3	41	38	3
5.1	32	51	19
5.2	21	52	31
5.3	27	56	29
6.1	13	3	10
6.2	46	52	6
6.3	13	52	39
6.4	11	31	20
7.1	49	27	22
7.2	1	46	45
7.3	24	24	0
7.4	27	10	17
8.1	54	6	48
8.2	8	4	4
8.3	53	26	27
9.1	38	39	1
9.2	51	22	29
9.3	57	33	24
9.4	58	58	0
10.1	18	13	5
10.2	43	39	4
10.3	17	31	14
11.1	40	48	8
11.2	12	10	2
11.3	52	37	15
11.4	22	8	14
12.1	45	16	29
12.2	55	12	43
12.3	29	33	4
13.1	35	20	15
13.2	42	47	5
13.3	4	36	32
13.4	37	9	28
13.5	29	42	13
14.1	20	23	3
14.2	32	50	18
14.3	25	42	17
15.1	10	2	8
15.2	5	17	12
15.3	13	1	12
15.4	9	33	24
16.1	2	24	22
16.2	56	30	26
16.3	29	14	15
16.4	43	14	29

Appendix 20 – Rank-order Differentials for Difficulty – Preparedness

Competency	Difficulty Ranking	Preparedness Ranking	Differential
1.1	41	55	14
1.2	8	19	11
1.3	25	18	7
2.1	5	20	15
2.2	35	45	10
2.3	25	27	2
2.4	49	49	0
3.1	51	5	46
3.2	28	29	1
3.3	37	44	7
3.4	43	7	36
4.1	16	39	23
4.2	20	57	37
4.3	49	38	11
5.1	40	51	11
5.2	4	52	48
5.3	15	56	41
6.1	29	3	26
6.2	19	52	33
6.3	30	52	22
6.4	25	31	6
7.1	11	27	16
7.2	9	46	37
7.3	58	24	34
7.4	2	10	8
8.1	37	6	31
8.2	57	4	53
8.3	53	26	27
9.1	24	39	15
9.2	45	22	23
9.3	6	33	27
9.4	14	58	44
10.1	1	13	12
10.2	3	39	36
10.3	13	31	18
11.1	23	48	25
11.2	10	10	0
11.3	17	37	20
11.4	7	8	1
12.1	17	16	1
12.2	32	12	20
12.3	21	33	12
13.1	35	20	15
13.2	48	47	1
13.3	33	36	3
13.4	34	9	25
13.5	31	42	11
14.1	37	23	14
14.2	12	50	38
14.3	54	42	12
15.1	45	2	43
15.2	54	17	37
15.3	44	1	43
15.4	56	33	23
16.1	52	24	28
16.2	42	30	12
16.3	45	14	31
16.4	21	14	7

Appendix 21 – Rasch Case Estimates for the Perspectives

Case	Importance measure	Difficulty measure	Preparedness measure
1	-1.11	0.03	0.83
2	-0.88	0.93	-0.88
3	-0.25	0	0.65
4	-0.87	-0.05	0.76
5	-0.13	-0.56	0.7
6	-1.11	-1.27	1.86
7	-1.88	-1.62	0.7
8	-0.57	-0.15	0.65
9	-0.92	0.62	1.25
10	-0.6	0.12	0.1
11	0	-0.25	0.71
12	-1.45	-0.02	-1.35
13	-0.1	-0.55	0.98
14	-1.07	-0.87	1.35
15	-1.45	-0.89	0.01
16	-0.37	0.62	-1.68
17	-0.25	0.38	-1.43
18	-1.23	-0.55	0.13
19	-1	-1.27	-1.09
20	-1.07	-0.38	-1.05
21	0.13	0.24	-0.32
22	-0.54	0.07	-0.54
23	-2.91	2.82	-6.2
24	-0.31	0.47	-0.64
25	-0.01	0.59	-0.29
26	-0.16	1.49	-0.67
27	0.97	1.11	-0.08
28	-1.23	0.24	-2.25
29	-2.19	-0.84	-1.63
30	-2.07	-0.02	-2.66
31	-1.36	-0.51	-0.98
32	0.05	2.15	-1.09
33	-1.84	-0.11	-0.23
34	-0.47	0	-1.09
35	-2.13	0.07	0.74

Appendix 22 – Importance Rankings using Frequency Analysis

Student Importance Rankings

Competency		%age	Rank
2.1	identifies the requirements necessary to complete a task	100	1
7.1	priortises competing tasks within the time available	100	1
10.2	able to distinguish between relevant and irrelevant items	100	1
7.2	balances work, social, family and study commitments	100	1
16.1	reads and writes at an appropriate level	100	1
8.2	responds to others with respect	100	1
10.1	able to navigate large bodies of content	100	1
2.2	plans an appropriate strategy to undertake a task	95	8
13.3	selects the appropriate technology tool for the task at hand	95	8
15.4	downloads and uploads information and resources	95	8
6.3	identifies and rectifies gaps in one's own understanding	95	8
14.3	asks for guidance or seek clarification for misunderstandings	95	8
15.1	uses a web browser with skill and purpose	95	8
3.2	provides responses in clear, concise and unambiguous language	90	14
11.2	forms connections between prior knowledge and new knowledge	90	14
15.2	uses search engines effectively	90	14
6.1	seeks information through either own enquiries or the questioning of others	90	14
11.1	develops responses which synthesise a range of ideas	90	14
15.3	searches the Internet strategically	90	14
5.2	evaluates a set of search results critically	90	14
13.1	demonstrates knowledge and use of Learning Management System	90	14
13.5	employs a logical process to identify and solve a computer problem	90	14
3.4	applies the rules of netiquette consistently	90	14
5.3	critiques a web site in relation to content	85	24
12.1	willing to have ideas challenged	85	24
12.3	uses feedback to evaluate own performance (self critique)	85	24
9.1	views oneself positively as a learner	85	24
2.3	uses problem solving strategies	85	24
14.1	acknowledges the facilitation role of lecturer in the learning environment	85	24
6.4	undertakes set tasks independently	85	24
13.2	makes allowances for the virtual nature of the learning environment	85	24
12.2	considers and acts upon feedback from members of the learning community	85	24
1.2	adapts learning style to the e-Learning environment	80	33
9.3	justifies own stance on an issue	80	33
11.4	uses technology to assist in the construction of knowledge	80	33
10.3	cross references between sources to determine accuracy	75	36
14.2	recognises lecturer's response as a contribution and not the final word on a issue	75	36
7.4	works to a disciplined timeframe	75	36
16.2	accesses information from a variety of sources (e.g. web pages, podcasts)	75	36
3.1	uses inter-personal communication skills	70	40
1.3	uses technology to support own learning style	70	40
5.1	critiques the responses of others constructively	70	40
2.4	engages in the process of reflection	65	43
9.2	contributes new ideas to a discussion	65	43
16.3	extracts information from a variety of formats	65	43
1.1	understands own cognitive processes and thinking strategies	65	43
13.4	integrates a variety of software applications to create a product	65	43
7.3	anticipates and makes allowances for "wait time" in asynchronous discussions	60	48
4.3	encourages others to post through positive responses	60	48
11.3	works with others to collaboratively construct knowledge	60	48
8.3	views oneself as a member of the learning community	55	51
4.1	arranges schedule to allow for regular online sessions	50	52
3.3	determines when it's time to 'listen' to or contribute a response	45	53
16.4	presents information in a variety of formats (video, audio, etc)	45	53
4.2	seeks interaction with other members of the learning community	40	55
6.2	goes outside the technology and learning community to seek information	40	55
8.1	shares personal experiences in responses when relating to topic and others	40	55
9.4	comments upon or critiques a response made by the lecturer	20	58

Note: this table has been divided roughly into quarters simply to improve readability.

Appendix 22 – Continued

Staff Importance Rankings

Competency		%age	Rank
2.1	identifies the requirements necessary to complete a task	100	1
2.2	plans an appropriate strategy to undertake a task	100	1
3.2	provides responses in clear, concise and unambiguous language	100	1
7.1	priortises competing tasks within the time available	100	1
10.2	able to distinguish between relevant and irrelevant items	100	1
10.3	cross references between sources to determine accuracy	100	1
11.2	forms connections between prior knowledge and new knowledge	100	1
13.3	selects the appropriate technology tool for the task at hand	100	1
15.2	uses search engines effectively	100	1
5.3	critiques a web site in relation to content	93	10
6.1	seeks information through either own enquiries or the questioning of others	93	11
7.2	balances work, social, family and study commitments	93	11
11.1	develops responses which synthesise a range of ideas	93	11
12.1	willing to have ideas challenged	93	11
12.3	uses feedback to evaluate own performance (self critique)	93	11
14.2	recognises lecturer's response as a contribution and not the final word on a issue	93	11
15.3	searches the Internet strategically	93	11
15.4	downloads and uploads information and resources	93	11
16.1	reads and writes at an appropriate level	93	11
1.2	adapts learning style to the e-Learning environment	87	20
3.1	uses inter-personal communication skills	87	20
3.3	determines when it's time to 'listen' to or contribute a response	87	20
5.2	evaluates a set of search results critically	87	20
6.3	identifies and rectifies gaps in one's own understanding	86	24
9.1	views oneself positively as a learner	86	24
13.1	demonstrates knowledge and use of Learning Management System	86	24
14.3	asks for guidance or seek clarification for misunderstandings	86	24
15.1	uses a web browser with skill and purpose	86	24
1.3	uses technology to support own learning style	80	29
2.3	uses problem solving strategies	80	29
2.4	engages in the process of reflection	80	29
7.3	anticipates and makes allowances for "wait time" in asynchronous discussions	79	32
7.4	works to a disciplined timeframe	79	32
8.2	responds to others with respect	79	32
9.2	contributes new ideas to a discussion	79	32
10.1	able to navigate large bodies of content	79	32
14.1	acknowledges the facilitation role of lecturer in the learning environment	79	32
16.3	extracts information from a variety of formats	79	32
6.4	undertakes set tasks independently	77	39
13.2	makes allowances for the virtual nature of the learning environment	77	39
1.1	understands own cognitive processes and thinking strategies	73	41
4.2	seeks interaction with other members of the learning community	73	41
8.3	views oneself as a member of the learning community	71	43
12.2	considers and acts upon feedback from members of the learning community	71	43
16.2	accesses information from a variety of sources (e.g. web pages, podcasts)	71	43
4.1	arranges schedule to allow for regular online sessions	67	46
5.1	critiques the responses of others constructively	67	46
6.2	goes outside the technology and learning community to seek information	64	48
9.3	justifies own stance on an issue	64	48
11.4	uses technology to assist in the construction of knowledge	64	48
13.5	employs a logical process to identify and solve a computer problem	64	48
3.4	applies the rules of netiquette consistently	60	52
9.4	comments upon or critiques a response made by the lecturer	57	53
4.3	encourages others to post through positive responses	47	54
11.3	works with others to collaboratively construct knowledge	43	55
13.4	integrates a variety of software applications to create a product	43	55
16.4	presents information in a variety of formats (video, audio, etc)	43	55
8.1	shares personal experiences in responses (when relating to topic and others	27	58

Note: this table has been divided roughly into quarters simply to improve readability.

Appendix 23 – Difficulty Rankings using Frequency Analysis

Student Difficulty Rankings

Competency		%age	Rank
7.4	works to a disciplined timeframe	55	1
11.3	works with others to collaboratively construct knowledge	55	1
7.1	priortises competing tasks within the time available	50	3
7.2	balances work, social, family and study commitments	50	3
11.1	develops responses which synthesise a range of ideas	50	3
1.2	adapts learning style to the e-Learning environment	45	6
10.1	able to navigate large bodies of content	45	6
10.2	able to distinguish between relevant and irrelevant items	45	6
4.1	arranges schedule to allow for regular online sessions	40	9
4.2	seeks interaction with other members of the learning community	40	9
10.3	cross references between sources to determine accuracy	40	9
6.3	identifies and rectifies gaps in one's own understanding	35	12
1.3	uses technology to support own learning style	30	13
4.3	encourages others to post through positive responses	30	13
5.1	critiques the responses of others constructively	30	13
5.2	evaluates a set of search results critically	30	13
6.2	goes outside the technology and learning community to seek information	30	13
9.4	comments upon or critiques a response made by the lecturer	30	13
13.4	integrates a variety of software applications to create a product	30	13
16.4	presents information in a variety of formats (video, audio, etc)	30	13
1.1	understands own cognitive processes and thinking strategies	25	21
2.3	uses problem solving strategies	25	21
3.1	uses inter-personal communication skills	25	21
3.2	provides responses in clear, concise and unambiguous language	25	21
6.1	seeks information through either own enquiries or the questioning of others	25	21
6.4	undertakes set tasks independently	25	21
11.4	uses technology to assist in the construction of knowledge	25	21
13.5	employs a logical process to identify and solve a computer problem	25	21
16.2	accesses information from a variety of sources (e.g. web pages, podcasts)	25	21
2.1	identifies the requirements necessary to complete a task	20	30
2.2	plans an appropriate strategy to undertake a task	20	30
5.3	critiques a web site in relation to content	20	30
8.1	shares personal experiences in responses when relating to topic and others	20	30
9.3	justifies own stance on an issue	20	30
11.2	forms connections between prior knowledge and new knowledge	20	30
12.1	willing to have ideas challenged	20	30
13.2	makes allowances for the virtual nature of the learning environment	20	30
13.3	selects the appropriate technology tool for the task at hand	20	30
15.3	searches the Internet strategically	20	30
2.4	engages in the process of reflection	15	40
3.3	determines when it's time to 'listen' to or contribute a response	15	40
7.3	anticipates and makes allowances for "wait time" in asynchronous discussions	15	40
9.1	views oneself positively as a learner	15	40
9.2	contributes new ideas to a discussion	15	40
12.2	considers and acts upon feedback from members of the learning community	15	40
12.3	uses feedback to evaluate own performance (self critique)	15	40
14.1	acknowledges the facilitation role of lecturer in the learning environment	15	40
14.2	recognises lecturer's response as a contribution and not the final word on a issue	15	40
15.2	uses search engines effectively	15	40
16.3	extracts information from a variety of formats	15	40
3.4	applies the rules of netiquette consistently	10	51
8.3	views oneself as a member of the learning community	10	51
13.1	demonstrates knowledge and use of Learning Management System	10	51
14.3	asks for guidance or seek clarification for misunderstandings	10	51
15.1	uses a web browser with skill and purpose	10	51
16.1	reads and writes at an appropriate level	10	51
8.2	responds to others with respect	5	57
15.4	downloads and uploads information and resources	5	57

Note: this table has been divided roughly into quarters simply to improve readability.

Appendix 23 – Continued

Staff Difficulty Rankings

Competency		%age	Rank
10.1	able to navigate large bodies of content	79	1
1.1	understands own cognitive processes and thinking strategies	73	2
6.3	identifies and rectifies gaps in one's own understanding	64	3
7.4	works to a disciplined timeframe	64	3
10.2	able to distinguish between relevant and irrelevant items	64	3
12.3	uses feedback to evaluate own performance (self critique)	64	3
5.2	evaluates a set of search results critically	60	7
5.3	critiques a web site in relation to content	60	7
7.2	balances work, social, family and study commitments	57	9
10.3	cross references between sources to determine accuracy	57	9
11.1	develops responses which synthesise a range of ideas	57	9
12.1	willing to have ideas challenged	57	9
1.2	adapts learning style to the e-Learning environment	53	13
7.1	priortises competing tasks within the time available	50	14
9.4	comments upon or critiques a response made by the lecturer	50	14
11.2	forms connections between prior knowledge and new knowledge	50	14
12.2	considers and acts upon feedback from members of the learning community	50	14
15.3	searches the Internet strategically	50	14
13.5	employs a logical process to identify and solve a computer problem	43	19
16.3	extracts information from a variety of formats	43	19
2.4	engages in the process of reflection	40	21
5.1	critiques the responses of others constructively	40	21
15.2	uses search engines effectively	38	23
4.1	arranges schedule to allow for regular online sessions	36	24
13.4	integrates a variety of software applications to create a product	36	24
14.2	recognises lecturer's response as a contribution and not the final word on a issue	36	24
16.2	accesses information from a variety of sources (e.g. web pages, podcasts)	36	24
16.4	presents information in a variety of formats (video, audio, etc)	36	24
1.3	uses technology to support own learning style	33	29
3.2	provides responses in clear, concise and unambiguous language	33	29
6.4	undertakes set tasks independently	31	31
4.2	seeks interaction with other members of the learning community	29	32
11.3	works with others to collaboratively construct knowledge	29	32
11.4	uses technology to assist in the construction of knowledge	29	32
15.1	uses a web browser with skill and purpose	29	32
16.1	reads and writes at an appropriate level	29	32
2.2	plans an appropriate strategy to undertake a task	27	37
2.3	uses problem solving strategies	27	37
6.2	goes outside the technology and learning community to seek information	21	39
9.2	contributes new ideas to a discussion	21	39
15.4	downloads and uploads information and resources	21	39
2.1	identifies the requirements necessary to complete a task	20	42
3.3	determines when it's time to 'listen' to or contribute a response	20	42
6.1	seeks information through either own enquiries or the questioning of others	14	44
9.1	views oneself positively as a learner	14	44
9.3	justifies own stance on an issue	14	44
13.1	demonstrates knowledge and use of Learning Management System	14	44
13.3	selects the appropriate technology tool for the task at hand	14	44
14.3	asks for guidance or seek clarification for misunderstandings	14	44
3.1	uses inter-personal communication skills	13	50
4.3	encourages others to post through positive responses	13	50
13.2	makes allowances for the virtual nature of the learning environment	8	52
3.4	applies the rules of netiquette consistently	7	53
7.3	anticipates and makes allowances for "wait time" in asynchronous discussions	7	53
8.2	responds to others with respect	7	53
14.1	acknowledges the facilitation role of lecturer in the learning environment	7	53
8.1	shares personal experiences in responses when relating to topic and others	0	57
8.3	views oneself as a member of the learning community	0	57

Note: this table has been divided roughly into quarters simply to improve readability.

Appendix 24 – Preparedness Rankings using Frequency Analysis

Student Preparedness Rankings

Competency		%age	Rank
11.2	forms connections between prior knowledge and new knowledge	100	1
8.2	responds to others with respect	95	2
15.1	uses a web browser with skill and purpose	95	2
15.4	downloads and uploads information and resources	95	2
16.1	reads and writes at an appropriate level	95	2
2.1	identifies the requirements necessary to complete a task	90	6
3.4	applies the rules of netiquette consistently	90	6
9.1	views oneself positively as a learner	90	6
15.2	uses search engines effectively	90	6
2.3	uses problem solving strategies	85	10
3.1	uses inter-personal communication skills	85	10
3.2	provides responses in clear, concise and unambiguous language	85	10
3.3	determines when it's time to 'listen' to or contribute a response	85	10
6.1	seeks information through either own enquiries or the questioning of others	85	10
9.2	contributes new ideas to a discussion	85	10
11.1	develops responses which synthesise a range of ideas	85	10
13.1	demonstrates knowledge and use of Learning Management System	85	10
15.3	searches the Internet strategically	85	10
2.2	plans an appropriate strategy to undertake a task	80	19
5.2	evaluates a set of search results critically	80	19
6.4	undertakes set tasks independently	80	19
8.3	views oneself as a member of the learning community	80	19
9.3	justifies own stance on an issue	80	19
11.4	uses technology to assist in the construction of knowledge	80	19
13.5	employs a logical process to identify and solve a computer problem	80	19
16.3	extracts information from a variety of formats	80	19
5.1	critiques the responses of others constructively	75	27
7.1	priortises competing tasks within the time available	75	27
10.2	able to distinguish between relevant and irrelevant items	75	27
13.2	makes allowances for the virtual nature of the learning environment	75	27
13.4	integrates a variety of software applications to create a product	75	27
14.1	acknowledges the facilitation role of lecturer in the learning environment	75	27
14.3	asks for guidance or seek clarification for misunderstandings	75	27
1.3	uses technology to support own learning style	70	34
6.3	identifies and rectifies gaps in one's own understanding	70	34
7.3	anticipates and makes allowances for "wait time" in asynchronous discussions	70	34
10.1	able to navigate large bodies of content	70	34
12.2	considers and acts upon feedback from members of the learning community	70	34
12.3	uses feedback to evaluate own performance (self critique)	70	34
13.3	selects the appropriate technology tool for the task at hand	70	34
14.2	recognises lecturer's response as a contribution and not the final word on a issue	70	34
5.3	critiques a web site in relation to content	65	42
6.2	goes outside the technology and learning community to seek information	65	42
7.4	works to a disciplined timeframe	65	42
8.1	shares personal experiences in responses when relating to topic and others	65	42
11.3	works with others to collaboratively construct knowledge	65	42
16.2	accesses information from a variety of sources (e.g. web pages, podcasts)	65	42
1.2	adapts learning style to the e-Learning environment	60	48
4.3	encourages others to post through positive responses	60	48
9.4	comments upon or critiques a response made by the lecturer	60	48
10.3	cross references between sources to determine accuracy	60	48
12.1	willing to have ideas challenged	60	48
2.4	engages in the process of reflection	55	53
4.2	seeks interaction with other members of the learning community	55	53
7.2	balances work, social, family and study commitments	50	55
16.4	presents information in a variety of formats (video, audio, etc)	50	55
1.1	understands own cognitive processes and thinking strategies	45	57
4.1	arranges schedule to allow for regular online sessions	45	57

Note: this table has been divided roughly into quarters simply to improve readability.

Appendix 24– Continued

Staff Rankings Of Student Preparedness

Competency		%age	Rank
13.1	demonstrates knowledge and use of Learning Management System	71	1
15.1	uses a web browser with skill and purpose	71	2
6.1	seeks information through either own enquiries or the questioning of others	57	3
8.2	responds to others with respect	57	3
14.1	acknowledges the facilitation role of lecturer in the learning environment	57	3
15.4	downloads and uploads information and resources	57	6
15.2	uses search engines effectively	54	7
11.4	uses technology to assist in the construction of knowledge	50	8
14.3	asks for guidance or seek clarification for misunderstandings	50	8
1.3	uses technology to support own learning style	47	10
8.1	shares personal experiences in responses when relating to topic and others	47	10
15.3	searches the Internet strategically	43	12
8.3	views oneself as a member of the learning community	43	13
9.1	views oneself positively as a learner	43	13
6.4	undertakes set tasks independently	38	15
13.2	makes allowances for the virtual nature of the learning environment	38	15
6.2	goes outside the technology and learning community to seek information	36	17
7.1	priortises competing tasks within the time available	36	17
7.2	balances work, social, family and study commitments	36	17
10.1	able to navigate large bodies of content	36	17
10.2	able to distinguish between relevant and irrelevant items	36	17
11.2	forms connections between prior knowledge and new knowledge	36	17
11.3	works with others to collaboratively construct knowledge	36	17
12.3	uses feedback to evaluate own performance (self critique)	36	17
16.2	accesses information from a variety of sources (e.g. web pages, podcasts)	36	17
16.3	extracts information from a variety of formats	36	17
16.4	presents information in a variety of formats (video, audio, etc)	36	17
1.2	adapts learning style to the e-Learning environment	33	28
2.3	uses problem solving strategies	33	28
2.4	engages in the process of reflection	33	28
3.1	uses inter-personal communication skills	33	28
3.4	applies the rules of netiquette consistently	33	28
16.1	reads and writes at an appropriate level	29	33
9.2	contributes new ideas to a discussion	29	34
12.2	considers and acts upon feedback from members of the learning community	29	34
13.3	selects the appropriate technology tool for the task at hand	29	34
13.4	integrates a variety of software applications to create a product	29	34
13.5	employs a logical process to identify and solve a computer problem	29	34
4.3	encourages others to post through positive responses	27	39
7.3	anticipates and makes allowances for "wait time" in asynchronous discussions	21	40
7.4	works to a disciplined timeframe	21	40
10.3	cross references between sources to determine accuracy	21	40
14.2	recognises lecturer's response as a contribution and not the final word on a issue	21	40
2.1	identifies the requirements necessary to complete a task	20	44
3.2	provides responses in clear, concise and unambiguous language	20	44
5.3	critiques a web site in relation to content	20	44
3.3	determines when it's time to 'listen' to or contribute a response	14	47
4.1	arranges schedule to allow for regular online sessions	14	47
4.2	seeks interaction with other members of the learning community	14	47
6.3	identifies and rectifies gaps in one's own understanding	14	47
9.3	justifies own stance on an issue	14	47
11.1	develops responses which synthesise a range of ideas	14	47
1.1	understands own cognitive processes and thinking strategies	13	53
2.2	plans an appropriate strategy to undertake a task	13	53
5.1	critiques the responses of others constructively	13	53
5.2	evaluates a set of search results critically	13	53
9.4	comments upon or critiques a response made by the lecturer	7	57
12.1	willing to have ideas challenged	0	58

Note: this table has been divided roughly into quarters simply to improve readability.

Appendix 25 – Rank-order Differentials for Difficulty – Students and Staff

Competency	Student Ranking	Staff Ranking	Differential
1.1	21	2	19
1.2	6	13	7
1.3	13	29	16
2.1	30	42	12
2.2	30	37	7
2.3	21	37	16
2.4	40	21	19
3.1	21	50	29
3.2	21	29	8
3.3	40	42	2
3.4	51	53	2
4.1	9	24	15
4.2	9	32	23
4.3	13	50	37
5.1	13	21	8
5.2	13	7	6
5.3	30	7	23
6.1	21	44	23
6.2	13	39	26
6.3	12	3	9
6.4	21	31	10
7.1	3	14	11
7.2	3	9	6
7.3	40	53	13
7.4	1	3	2
8.1	30	57	27
8.2	57	53	4
8.3	51	57	6
9.1	40	44	4
9.2	40	39	1
9.3	30	44	14
9.4	13	14	1
10.1	6	1	5
10.2	6	3	3
10.3	9	9	0
11.1	3	9	6
11.2	30	14	16
11.3	1	32	31
11.4	21	32	11
12.1	30	9	21
12.2	40	14	26
12.3	40	3	37
13.1	51	44	7
13.2	30	52	22
13.3	30	44	14
13.4	13	24	11
13.5	21	19	2
14.1	40	53	13
14.2	40	24	16
14.3	51	44	7
15.1	51	32	19
15.2	40	23	17
15.3	30	14	16
15.4	57	39	18
16.1	51	32	19
16.2	21	24	3
16.3	40	19	21
16.4	13	24	11

Appendix 26 – Rank-order Differentials for Preparedness – Students and Staff

Competency	Student Ranking	Staff Ranking	Differential
1.1	57	53	4
1.2	48	28	20
1.3	34	10	24
2.1	6	44	38
2.2	19	53	34
2.3	10	28	18
2.4	53	28	25
3.1	10	28	18
3.2	10	44	34
3.3	10	47	37
3.4	6	28	22
4.1	57	47	10
4.2	53	47	6
4.3	48	39	9
5.1	27	53	26
5.2	19	53	34
5.3	42	44	2
6.1	10	3	7
6.2	42	17	25
6.3	34	47	13
6.4	19	15	4
7.1	27	17	10
7.2	55	17	38
7.3	34	40	6
7.4	42	40	2
8.1	42	10	32
8.2	2	3	1
8.3	19	13	6
9.1	6	13	7
9.2	10	34	24
9.3	19	47	28
9.4	48	57	9
10.1	34	17	17
10.2	27	17	10
10.3	48	40	8
11.1	10	47	37
11.2	1	17	16
11.3	42	17	25
11.4	19	8	11
12.1	48	58	10
12.2	34	34	0
12.3	34	17	17
13.1	10	1	9
13.2	27	15	12
13.3	34	34	0
13.4	27	34	7
13.5	19	34	15
14.1	27	3	24
14.2	34	40	6
14.3	27	8	19
15.1	2	2	0
15.2	6	7	1
15.3	10	12	2
15.4	2	6	4
16.1	2	33	31
16.2	42	17	25
16.3	19	17	2
16.4	55	17	38