VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wānanga o te Ūpoko o te Ika a Māui

School of Information Management

INFO 403 RESEARCH METHODS IN INFORMATION SYSTEMS

Trimester 1 2007

COURSE OUTLINE

Contact Details

Lecturer:
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Class Times and Room Numbers

Seminar

Wednesdays, 11am to 2pm
EA 001

Workshops

Fridays, 12noon to 3pm
CO 245

Course Objectives

At the end of the course, the student should be able to
   • Identify, describe, and determine the applicability of a selection of research methods to questions in Information Systems
   • Decide on appropriate methods to investigate various fields of IS
   • Formulate a research proposal in particular area
   • Critique and discuss existing research in IS from a methodological perspective.

Course Content

The course will cover the following topics:

Week	Pg	Topic #	Class Topics (pages)	Workshop Topic	Week
1			Course Introduction		1
2	113	1	Science (70)		2
		2	Literature Review and the Research Process (43)		
3	100	3	Choice of Paradigms & Methodology (42)	Qualitative Data Collection (Part 1)	3
		4	Theories (58)		
4	143	5 & 6	Case Studies (143)	Qualitative Data Collection (Part 2)	4
5	102	7	Process Tracing (56)	Qualitative Data Analysis (Part 1)	5
		8	Delphi Studies (46)		
6	128	9	Observational Data Collection (78)	Qualitative Data Analysis (Part 2)	6
		10	Experimental Research (50)		
7	76	11	Design Science (76)	Qualitative Data Analysis (Part 3)	7
8	83	12	Survey Research (83)	Introduction to Statistics (Part 1)	8
9	129	14 & 15	Validity and Reliability (129)	Introduction to Statistics (Part 2)	9
10	109	16 & 17	Scale and Instrument Development (129)	ANOVA Models	10
11	115	18	Quantitative Modelling Issues	Factor Analysis	11
12	127	19	Ethnography (57)	Structural Equation Modelling	12
		20	Action Research (70)		

Expected Workload

There is a 3-hour class per week plus an hour or two of tutorials. You should expect to spend between 2 to 4 hours per week on preparation for the class. You should also expect to spend another 5 to 7 hours per week in the library to work on your research proposal and in-class presentation.

Group Work

All assessment items are for individual work. However, students are encouraged to discuss the material and their assignments amongst themselves. However, all assessment material must be individual work.

Readings

All readings will be available at Student Notes.

The following reading list is structured by topic. Refer to the above schedule when each topic is to be discussed. ALL STUDENTS MUST READ IN DEPTH THE INDICATED PRIMARY READINGS and be prepared to discuss and critique them. The presenting students for that week must also read the secondary literature in depth, and include these in their presentation.

The course readings and class discussions emphasize breadth over depth. IT IS EXPECTED THAT STUDENTS USE THE APPROPRIATE SECONDARY AND OTHER LITERATURE FOR WORK ON THEIR MAIN COURSE ASSESSMENT ITEM, THE RESEARCH PROPOSAL (see Assessment section below).

While there are many books on each of the topics discussed in the course, the readings focus on journal articles specific to the IS or the wider managerial field. The interested student may consult the references in the articles for further reading.

Additional Background Literature

This is strongly recommended for those wanting a more in-depth look at the philosophical aspects of social science research. It will not be discussed in class, but is helpful to put you on a firm philosophical footing. The books are very clearly written and easy reads.

- Kuhn, Thomas (1962). The Structure of Scientific Revolutions. University of Chicago Press, Chicago, Ill.

  This classic is probably one of the most influential books on what science is. It's short, and an easy and fascinating read.

- Fay, Brian (1996). Contemporary Philosophy of Social Science. Blackwell Publishers, Oxford, UK.

  This is a very brief and easy to read introduction to the central questions that confront the study of human beings and human organizations. Targeted at advanced undergraduates, so very readable and pertinent.

- Laudan, Larry (1990). Science and Relativism - Some Key Controversies in the Philosophy of Science. University of Chicago Press, Chicago, Ill.

  A brief introductory book on the relativist debate in the philosophy of science. Targeted at undergraduates and written in the form of a witty dialogue between a relativist, positivist, realist, and pragmatist philosopher, the book explores some of the major points of differences between them.

Science (Week 2)

<u>Primary Literature</u>

- Casti, John L. (1989) Paradigms Lost. Avon Books, New York. Chapter 1: Faith, Hope, and Asperity. pp. 67ff.

Casti is a very basic introduction to what science is. Fundamental. For more on this topic, read the book by Thomas Kuhn, mentioned above, which is heavily referenced by Casti.

Literature Review & Good Research (Week 2)

While this literature is not technically speaking "methods" literature, it is important pragmatic advice.

<u>Primary Literature</u>

- Webster, Jane and Watson, Richard T. (2002) Analysing the Past to Prepare for the Future: Writing a Literature Review. MIS Quarterly. Vol 26, No 2, pp. xiii-xxiii.

A brief intro on how to do a good lit review that not only demonstrates that you've read the literature, but also makes a contribution to the state of the field and is publishable.

- Straub, Detmar W., Ang, Soon, and Evaristo, Roberto (1994) Normative Standards for IS Research. ACM DATABASE, Feb 1994.

Straub et al. provide empirical results on what reviewers and editors look for when they evaluate research. Note that these standards will also be applied to your work in the Honours program and beyond.

- Smith, Alan Jay. (1990) The Task of the Referee. IEEE Computer. Vol 23, No 4, pp. 65-73

This is a description of the criteria of a good paper from the perspective of the referee. It's a valuable resource for authors.

- Summers, John O. (2001) Guidelines for Conducting Research and Publishing in Marketing: From Conceptualization Through the Review Process. Academy of Marketing Science. Vol. 29, No. 4, pp. 405-415.

A good description of the overall research process, applicable also to IS research.

Research Paradigms (Week 3)

<u>Primary Literature</u>

- Galliers, R.D. and Land, F.F. (1987) Choosing Appropriate Information Systems Research Methodologies. Communications of the ACM. Vol. 30, No. 11, pp. 900-902

Galliers and Land offer a very brief overview of the possible research methods in IS. This is a bit old, and we go into more detail in the course, but it's a very good (short!!!) introduction.

- Orlikowski, Wanda J. and Baroudi, Jack J. (1991) Studying Information Technology in Organizations: Research Approaches and Assumptions. Information Systems Research. Vol 2, No 1, pp. 1.

Orlikowski and Baroudi provide a brief overview over the research paradigms that are applied in IS research (although this has changed somewhat), and, more importantly, briefly describe three possible paradigms or philosophies that the IS researcher can adopt.

- Weber, Ron (2004) The Rhetoric of Positivism vs. Interpretivism: A Personal View. MIS Quarterly. Vol 28, No 1, pp. iii-xii.

Ron Weber's easy to read opinion piece suggests that the differences between interpretivism and positivism are not as wide as they are made out to be.

<u>Secondary Literature</u>

- Lee, Allen S. (1991) Integrating Positivist and Interpretivist Approaches to Organizational Research. Organization Science. Vol 2, No 4, pp. 342.

Allen Lee discusses the premises of the positivist and interpretivist paradigms and provides an example how they can be combined to offer greater insight into a phenomenon.

Theories (Week 3)

<u>Primary Literature</u>

- Gregor, Shirley (2006) The Nature of Theory in Information Systems. MIS Quarterly, Vol 30, No 3, Sept 2006, pp. 611-642

A very readable introduction to what theory is and what it is good for.

- Bacharach, Samuel B. (1989) Organizational Theories: Some Criteria for Evaluation. The Academy of Management Review. Vol 14, No 4, pp. 496-515.

Bacharach delineates theories from other types of studies and offers some guidelines on what makes a good theory.

- Whetten, David A. (1989) What Constitutes a Theoretical Contribution? The Academy of Management Review. Vol 14, No 4, pp. 490-495.

Whetten's short paper gives another introduction to the elements of theories in management research. It goes on to suggest pragmatic criteria for good theory based research and how it is evaluated by journal reviewers.

Case Studies (Week 4)

The readings on case research demonstrate that case research can be done in (at least) three different ways: An interpretive way, a positivst way, a theory testing, and a theory building way.

<u>Primary Literature (How-to)</u>

- Lacity, Mary C. and Janson, Marius A. (1994) Understanding qualitative data: A Framework of Text Analysis Methods. Journal of Management Information Systems. Vol. 11, No. 2, pp. 137.

Lacity and Janson provide a very brief discussion of what to do with qualitative data that is often collected from case studies. They look at positivist versus interpretivist qualitative analysis.

- Klein, Heinz K. and Myers, Michael D. (1999) A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. MIS Quarterly. Vol 23, No 1, pp 67-94.

Klein & Myers offer 7 principles for doing case study research in the interpretive paradigm.

- Pare, Guy (2004) Investigating Information Systems with Positivist Case Study Research. Communications of the AIS. Volume 13, pp 244-264.

Pare offers a very detailed and practical set of guidelines on planning, conducting, analysing and writing up positivist case studies.

- N.N. (2001) Interrater Reliability. Journal of Consumer Psychology. Vol. 10, No. 1&2, pp 71-73.

A two-pager on establishing reliability when analysing qualitative data.

- Eisenhardt, Kathleen M. (1989) Building Theories from Case Study Research. The Academy of Management Review. Vol 14, No 4, pp. 532-550.

Case studies can also be used to build theory. This is a very practical and detailed guide to grounded theory.

<u>Primary Literature (Examples)</u>

- Myers, Michael D. (1994). A Disaster for Everyone to See: An Interpretive Analysis of a Failed IS Project. Accounting, Management & Information Technology, 4 (4), pp. 185-201.

Myers offers an example of an interpretivist case study based on critical hermeneutics and shows how it can be used to make sense of apparently illogical situations. Very brief and easily readable.

- Horner Reich, Blaize and Benbasat, Izak (2000) Factors that Influence the Social Dimensions of Alignment Between Business and Information Technology Objectives. MIS Quarterly. Vol 24, No 1. pp 81-113.

This article shows how positivist case study research may be used to test theories.

<u>Secondary Literature</u>

- Prasad, Anshuman (2002) The Contest over Meaning: Hermeneutics as an Interpretive Methodology for Understanding Texts. Organizational Research Methods. Vol 5, No 1, pp. 12-33.

Prasad offer an introduction to the technique of hermeneutic interpretation as well as guidelines and a brief example of the application of hermenutics in organizational research.

- Nandhakumar, Joe, and Jones, Matthew (1997) Too Close for Comfort? Distance and Engagement in Interpretive Information System Research. Information Systems Journal. Vol 7, pp. 109-131.

Nandhakumar and Jones discuss the issue of how close the researcher should be to the phenomenon under observation. They also offer a good discussion of the basic assumptions of interpretivism.

- Douglas, David (2003) Grounded Theories of Management: A Methodological Review. Management Research News. Vol 26, No 5, pp. 44-52.

A brief review of the two different positions of how to conduct grounded theory research.

- DeVreede, Gert-Jan, Jones, Noel, and Mgaya, Rabson J. (1999) Exploring the Application and Acceptance of Group Support Systems in Africa. Journal of Management Information Systems. Vol 15, No 3, pp. 197-234.

An application of Grounded Theory to GSS, leading to an extension of the technology acceptance model (TAM).

- Orlikowski, Wanda J. (1993) CASE Tools as Organizational Change: Investigating Incremental and Radical Changes in Systems Development. MIS Quarterly. Dec 1993, pp. 309-340.

Another example of grounded theory, applied to the adoption of CASE tools

- Benbasat, Izak, Goldstein, David K. and Mead, Melissa (1987) The Case Research Strategy in Studies of Information Systems. MIS Quarterly. Sep 1987, pp 369-386.

Benbasat et al. offer some practical guidelines on conducting case studies and an evaluation and critique of prior case study research.

- Dube, Line and Pare, Guy (2003) Rigor in Information Systems Positivist Case Research: Current Practices, Trends, and Recommendations. MIS Quarterly. Vol 27, No 4, pp 597-635.

Dube & Pare offer a survey of case study research in the recent IS literature, focussing on methodological rigor, such as data validation and triangulation (see Pare's CAIS article above).

- Lee, Allen S. (1989) A Scientific Methodology for MIS Case Studies. MIS Quarterly. March 1989, p. 33-50.

Allen Lee shows, using an early IS case study by Lynne Markus, how case study research can satisfy scientific principles usually associated with quantitative research.

- Markus, M.L. (1983) Power, Politics, and MIS Implementation. *Communications of the ACM*. Vol. 28, No. 6, pp. 430-444.

This is the exemplar article used by both Benbasat et al. (1987) and Lee (1989) (see above).

- Darke, Peta, Shanks, Graeme and Broadbent, Marianne (1998) Successfully Completing Case Study Research: Combining Rigour, Relevance and Pragmatism. Information Systems Journal. Vol 8, pp 273-289.

Darke et al. offer answers to frequent practical and pragmatic issues in case study research. Very practical.

- Sarker, Suprateek and Lee, Allen S. (2002) Using a Positivist Case Research Methodology to Test Three Competing Theories-in-Use of Business Process Redesign. Journal of the AIS. Vol 2, Article 7.

Process Tracing (Week 5)

Primary Literature (How-to)

- Todd, Peter and Benbasat, Izak (1987) Process Tracing Methods in Decision Support Systems Research: Exploring the Black Box. MIS Quarterly. Dec 1987, pp. 493-512.

Todd & Benbasat provide a good introduction into what process tracing is and why it is useful. They discuss it within the context of Decision Support Systems research.

Primary Literature (Examples)

- Mao, Ji-Ye and Benbasat, Izak (1998) Contextualized Access to Knowledge: Theoretical Perspectives and a Process-Tracing Study. Information Systems Journal. Vol 8, pp. 217-239.

There's a lot of discussion of KBS and contextualized explanation, but focus on the methodological aspects of the process tracing.

- Hungerford, Bruce C; Hevner, Alan R. and Collins, Rosann W. (2004) Reviewing Software Diagrams: A Cognitive Study. IEEE Transactions on Software Engineering. Vol 30, No 2, pp 82-96.

Secondary Literature (How-to)

- Cook, Gary J. and Swain, Monte R. (1993) A Computerized Approach to Decision Process Tracing for Decision Support System Design. Decision Sciences. Vol 24, No 5, pp. 931-952.

Cook & Swain also discuss the use of process tracing and suggest computerized tool support can play an important role in process tracing.

Delphi Method (Week 5)

Primary Literature (How-to)

- Schmidt, Roy C. (1997) Managing Delphi Surveys Using Nonparametric Statistical Techniques. Decision Sciences. Vol 28 No 3, pp 763-774

Schmidt's article is probably the standard paper that describes how to do a Delphi study. Very clearly written, short, and to the point.

- Okoli, Chitu and Pawlowski, Suzanne D. (2004) The Delphi Method as a Research Tool: An Example, Design Considerations, and Applications. Information & Management. Vol 42, pp. 15-29.

This article is an introduction to the Delphi method, exemplified in an e-commerce research study. It offers a very detailed discussion of why Delphi might be chosen, differences to other survey studies, and how the Delphi study was executed.

Primary Literature (Example)

- Nevo D, Benbasat, I, and Wand, Y. (2003) Exploring Meta-Knowledge for Knowledge Management Systems - A Delphi Study. Proceedings of the 2003 AIS International Conference on Information Systems, Seattle, WA. December 2003.

This is a very thoroughly documented example of a Delphi study in knowledge management.

Observational Data Collection (Week 6)

Observational data collection can be used with a number of researchmethods, such as case studies, laboratory and field experiments, process tracing, etc.

Primary Literature (How-To)

- Weingart, Laurie R (1997) How did they do that? The Ways and Means of Studying Group Processes. Research in Organizational Behaviour. Vol 19, pp. 189-239.

Observing group processes and coding the observational data. Coding design guidelines for valid measures.

Primary Literature (Example)

- Nyerges, Timothy et al. (1998) Developing and Using Interaction Coding Systems for Studying Groupware Use. Human-Computer Interaction. Vol 13, pp 127-165.

Experimental Research (Week 6)

The literature focuses on laboratory experiments. However, one can also carry out experiments in the field. See the secondary readings on that.

<u>Primary Literature (How-to)</u>

- Benbasat, Izak (1990) Laboratory Experiments in Information Systems Studies with a Focus on Invidivuals: A Critical Appraisal. In: Benbasat, Izak (ed.) The Information Systems Research Challenge: Experimental Research Methods. Harvard Business School. 1990. Boston, MA.

Benbasat offers some guidelines on how to do laboratory experiments

- Jarvenpaa, Sirkka L., Dickson, Gary W. and DeSanctis Gerardine (1985) Methodological Issues in Experimental IS Research: Experiences and Recommendations. MIS Quarterly. June 1985, pp. 141-158.

Jarvenpaa et al. offer a critical review of the experimental research method in information presentation studies. A number of recommendations are offered, and an experimental study is presented which applies these recommendations.

<u>Primary Literature (Example)</u>

- Todd, Peter and Benbasat, Izak (1999) Evaluating the Impact of DSS, Cognitive Effort, and Incentives on Strategy Selection. Information Systems Research. Vol 10, No 4, pp. 356-374.

Todd & Benbasat describe an experimental study, from model development through a discussion of experimental setup to a thorough discussion of results. Focus on the experimental description.

<u>Secondary Literature (How-to)</u>

- Hughes, Cary T. and Gibson, Michael Lucas (1991) Students as Surrogates for Managers in a Decision-making Environment: An Experimental Study. Journal of Management Information Systems. Vol 8, No 2, pp. 153-166.

Hughes & Gibson discuss the fact that students are often used as convenience subjects when the target population is managers. They find empirical evidence that this is problematic, at least in some circumstances.

- Zmud, Robert W., Olson, Margrethe H. and Hauser, Richard (1990) Field Experimentation in MIS Research. In: Benbasat, Izak (ed.) The Information Systems Research Challenge: Experimental Research Methods. Harvard Business School. 1990. Boston, MA.

Zmud et al. offer a discussion of how to conduct field experiments in IS.

- Venkataram, N. and Zaheer, Akbar (1990) Electronic Integration and Strategic Advantage: A Quasi-Experimental Study in the Insurance Industry. Information Systems Research, Vol 1, No 4, pp 377-393.

Venkataram & Zaheer offer some discussion and an example of the field experiment method in IS research.

- Rosenthal, Robert (1966) Experimenter Effects in Behavioural Research. Meredith Publishing Company. New York, NY. Chapter 24.

This chapter is a discussion of how the (laboratory) experimenter can unknowingly influence the results of the study.

Design Research (Week 7)

Design research is very much feasible if you're a little technical minded and don't mind getting your hands "dirty" with some programming. It has a long tradition, but has only recently (with the Hevner et al., 2004 article) been accepted as a valid method by most of the IS community.

<u>Primary Literature</u>

- AIS (2004). Design Research in Information Systems. http://www.isworld.org. Last access December 21, 2004.

This is the Design Research page on ISWorld. It offers a good introduction to what Design Research is.

- Hevner, Alan R., March, Salvatore T., Park, Jinsoo and Ram, Sudha (2004). Design Science in Information Systems Research. MIS Quarterly. Vol 28, No 1, pp. 75-105.

Hevner et al. present a recent discussion of the place of Design Science in IS research. They provide 7 guidelines to good Design Science and offer some examples as well.

- Nunamaker, Jay F., Chen, Minder and Purdin, Titus D.M. (1991). Systems Development in Information Systems Research. Journal of Management Information Systems. Vol 7, No 3, pp. 89-106.

This article by Nunamker et al. shows that Design Research is not a recent phenomenon, it goes back quite a while. This article discusses the role that Design Research can play and how to conduct it, i.e. to ensure that you're doing research, not just building systems.

- Gregg, Dawn G., Kulkarny, Uday R. and Vinze, Ajay S. (2001). Understanding the Philosophical Underpinnings of Software Engineering Research in Information Systems. Information Systems Frontiers. Vol 3, No 2, pp. 169-183.

Offers a methodology and framework for software engineering research, i.e. Design Research.

Secondary Literature

- March, Salvatore T. and Smith, Gerald F. (1995). Design and Natural Science Research on Information Technology. Decision Support Systems. Vol 15, pp. 251-266.

This article offers a framework of research activities and outputs and discusses Design Research within this framework.

Survey Research (Week 8)

This is some literature on how to conduct a survey. We will get into issues of creating questionnaires in the coming weeks (9, and 10) and then talk about some modelling issues in week 11.

Primary Literature (Survey Research)

- Pinsonneault, Alain and Kraemer, Kenneth L. (1993) Survey Research Methodology in Management Information Systems: An Assessment. Journal of Management Information Systems. Vol 10, No 2, pp 75-105.

A good discussion of some methodological issues beyond scale reliability and validity. Offers an analysis of the MIS literature and identifies weaknesses in research design. Although this article is a bit older, many of the issues could probably be identified even today.

- Grover, Varun (2004) A Tutorial on Survey Research: From Constructs to Theory. Working Paper. http://dmsweb.badm.sc.edu/grover/survey/MIS-SUVY.html. Access on Dec 22nd, 2004.

Grover presents criteria for the conduct of survey research. These go beyond the validity and reliability of the instrument itself.

- Simsek, Zeki and Veiga, John F. (2001) A Primer on Internet Organizational Surveys. Organizational Research Methods. Vol 4, No 3, pp. 218-235.

Simsek & Veiga compare e-mail questionnaires with mail-in and telephone questionnaires in terms of response rate, bias, and other factors.

- Simsek, Zeki and Veiga, John F. (2000) The Electronic Survey Technique: An Integration and Assessment. Organizational Research Methods. Vol 3, No 1, pp. 93-115.

This article focuses on web-based questionnaires, and potential pitfalls and issues.

Validity and Reliability in Positivist Research (Week 9)

You can't get around issues of validity and reliability if you have a positivist philosophy. These are the criteria that tell you how to measure something properly, (e.g. by means of a survey questionnaire).

Primary Literature

- Straub, Detmar, Boudreau, Marie-Claude, and Gefen, David (2004) Validation Guidelines for IS Positivist Research. Communications of the AIS. Vol 13, Article 24.

This is another easy to read article in CAIS, offering an introduction to the concepts of validity and reliability, applicable to experimental and survey research.

- King, W.R. and He, J. (2005) External Validity in IS Survey Research. Communications fo the AIS. Vol. 26. Pp 880-894.

While Straub et al. focus mainly on internal and construct validity, this article offers a discussion of external validity.

- Cook, Thomas D., Campbell, Donald T. and Peracchio, Laura (1990) Quasi Experimentation. In: Dunnette, Marvin D. and Leaetta, M. Hough (eds.) Handbook of Industrial and Organizational Psychology. Consulting Psychologists Press, Palo Alto, CA. Pp. 491-516.

Focus on the discussion of the various validity and reliability concepts.

- Perreault, William D. and Leigh, Laurence E. (1989) Reliability of Nominal Data Based on Qualitative Judgements, Journal of Marketing Research, Vol 26, No 2, pp. 135-148.

Reliability is not only desirable for quantitative research but also for qualitative research. Different ways of approaching this concept re presented here

- Cortina, Jose M. (1993) What is Coefficient Alpha? An Examination of Theory and Applications. Journal of Applied Psychology. Vol 78, NO 1, pp. 98-104.

A discussion of what Cronbach's Alpha does and does not indicate and when to employ it in instrument design

Secondary Literature

- Lynch, John G. (1982) On the External Validity of Experiments in Consumer Research. *The Journal of Consumer Research*. Vol 9, No 3, pp. 225-239.

While Straub et al. discuss mainly issues of internal validity, this article focuses on external validity, i.e. how to make sure that the results are generalizable.

- Calder, B.J., Philips, L.W. and Tybout, A.M. (1982) The Concept of External Validity. *The Journal of Consumer Research*. Vol 9, No 3, pp. 240--244.

Calder et al. comment on the ideas by Lynch.

Scale and Instrument Development (Week 10)

Having covered the validity and reliability criteria in week 9, we now look at the actual steps to go through to make sure your questionnaire is valid and reliable.

Primary Literature (Scale Development How-To)

- Hinkin, Timothy R. (1998) A Brief Tutorial on the Development of Measures for Use in Survey Questionnaires. Organizational Research Methods. Vol 1, No 1, pp. 104-121.

Another article on scale development with detailed process and guidelines.

- Hufnagel, Ellen M., and Conca, Christopher (1994) User Response Data: The Potential for Errors and Biases. Information Systems Research. Vol 5, No 1, pp. 48-73.

A good overview on what you should and should not expect of respondents when employing a survey instrument.

Primary Literature (Examples)

- Moore, Gary C., and Benbasat, Izak (1991) Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. Information Systems Research. Vol 2, No 3, pp. 192-222.

Moore & Benbasat is a classic discuss at length the process and issues in instrument validation and offer a thorough example of instrument development.

- Goodhue, Dale L. (1998) Development and Measurement Validity of a Task-Technology Fit Instrument for User Evaluations of Information Systems. Decision Sciences. Vol 29, No. 1, pp. 105 - 138.

Goodhue provides a very good example of a more modern instrument development, making use of confirmatory factor techniques.

Secondary Literature (Scale Development How-To and Issues)

- Churchill, Gilbert A. (1979) A Paradigm for Developing Better Measures of Marketing Constructs. Journal of Marketing Research. Vol 16, No 1, pp 64-73.

The classic. A practical introduction and step-by-step guide to scale development.

- Boudreau, Marie-Claude, Gefen, David, and Straub, Detmar W. (2001) Validation in Information Systems Research: A State-of-the-Art Assessment. *MIS Quarterly*. Vol 25, No 1, pp. 1-16.

A survey of the recent literature with respect to instrument validation techniques employed by the researchers.

- Drury, D.H. and Farhoomand, A. (1997) Improving Management Information Systems Research: Question Order Effects in Surveys. Information Systems Journal. Vol 7, pp. 241-251.

A simple experiment that shows that the order in which questions are presented on a questionnaire influences the responses. However, no theory is given to account for this, and consequently, only limited recommendations are given.

- Keller, Tiffany and Danserau, Fred (2001) The Effect of Adding Items to Scales: An Illustrative Case of LMX. Organizational Research Methods. Vol 4, No 2, pp. 131-143.

Keller & Danserau examine in detail the effects of adding items to an existing instrument. The results show that this requires careful analysis and re-validation that goes beyond face validity and internal consistency.

Quantitative Modelling Issues (Week 11)

- Klem, Laura (2000) Structural Equation Modelling. In Grimm, L. and Yarnold P. (eds.) *Reading and Understanding more Multivariate Statistics*. Washington, DC. American Psychological Association.

- Thompson, B. (2000) Ten commandments of Structural Equation Modeling. In Grimm, L. and Yanrold, P. (eds.) *Reading and Understanding more Multivariate Statistics*. Washington, DC. American Psychological Association.

These are two chapters from a book on structural equation modelling, the most-used data analysis technique for survey data. Easy to read, no statistics knowledge required. NO FORMULAS in the book chapters ☺

- Doll, W.J. and Raghunathan, T.S. and Lim, J-S., and Gupta, Y.P. (1995) A Confirmatory Factor Analysis of the User Information Satisfaction Instrument. Information Systems Research. Vol 6 No 2, pp 177-188.

Doll et al. present an illustrative example of the difficulties in finding "the true" model in modern quantitative research.

- Jarvis, Cheryl Burke and MacKenzie, Scott B. and Podsakoff, Philip M. (2003). A Critical Review of Construct Indicators and Measurement Model Misspecification in Marketing and Consumer Research. *Journal of Consumer Research*, Vol. 30, pp. 199-218.

A brief discussion about the difference between formative and reflective concepts or indicators.

- Chin, W. (1998) Issues and Opinion on Structural Equation Modeling. MIS Quarterly. Vol 22, No. 1, pp vii-xvi.

Wynne Chin is one o the people who popularised structural equation modelling in IS research. Here are some of his tips on how to do it well.

- Borsboom, D. and Mellenbergh, G.J. and van Heerden, J. (2003) The Theoretical Status of Latent Variables. Psychological Review. Vol 11, No 2, pp 203-219.

Back to philosophy of science and the question of "What is real?".

Ethnography (Week 12)

Primary Literature (How-to)

- Myers, Michael D. (1999) Investigating Information Systems with Ethnographic Research. Communications of the AIS. Vol 2, Article 23.

A very brief but practical overview of what Ethnography is, and how ethnographic research is conducted (in IS). Points out that there are multiple types of ethnographic research.

Primary Literature (Example)

- Schultze, Ulrike (2000) A Confessional Account of an Ethnography about Knowledge Work. MIS Quarterly. Vol 24, No 1, pp. 3-41.

This is an example of ethnographic research.

Secondary Literature (How-to)

- Harvey, Lynda J. and Myers, Michael D. (1995) Scholarship and Practice: The Contribution of Ethnographic Research Methods to Bridging the Gap. Information Technology and People. Vol 8, No 3, pp. 13ff.

Another brief introduction to ethnography in IS research.

Action Research (Week 6)

Primary Literature (How-to)

- Baskerville, Richard L. (1999). Investigating Information Systems with Action Research. Communications of the AIS. Vol 2, Article 19.

A brief and easy to read introduction to what Action Research is all about.

- Baskerville, Richard L. and Myers, Michael (2004). Special Issue on Action Research in Information Systems: Making IS Research Relevant to Practice - Foreword. MIS Quarterly. Vol 28, No 3, pp. 329-335.

This is the foreword to a special issue of MISQ on action research. It briefly discusses the principles of action research and then shows how the articles in that issue (see the primary literature examples) employ action research.

<u>Primary Literature (Examples)</u>

I have taken one article from the MISQ issue on action research. The others are in the secondary literature (Examples). All follow a similar format.

- Street, Christopher T. and Meister, Darren B. (2004). Small Business Growth and Internal Transparency: The Role of Information Systems. MIS Quarterly. Vol 28, No 3, pp. 473-506.

A good write-up of an action research project.

<u>Secondary Literature (How-to)</u>

- Kock, Nereu F., McQueen, Robert J. and Scott, John L. (1997). Can Action Research be Made More Rigorous in a Positivist Sense? Journal of Systems and Information Technology. Vol 1, No 1, pp. 1-24.

This paper addresses some of the criticisms of action research and proposes a method to address them.

- Avison, David, Lau, Francis, Myers, Michael and Nielsen, Peter Axel (1999). Action Research. Communications of the ACM. Vol 42, No 1, pp. 94-97.

This is a really brief summary of what action research is.

Materials and Equipment

A set of readings will be available through student notes. You MUST purchase this readings package. A template with styles for all deliverables (see following section) will be available on Blackboard. You MUST use these styles for all written deliverables. Students are required to use a bibliography management system, such as BibTeX or EndNote or BibTeX. You MUST use such a system for written deliverables.

All writing that is turned in for assessment must conform to the style guidelines established for the course. The style guide with examples and templates will be made available on Blackboard. You MUST use this style guide.

Written material must be handed in electronically, acceptable formats are LaTeX (most preferred), DVI, PS, PDF or Word (least preferred). For free LaTeX software and introduction see http://www.ctan.org

Assessment Requirements

Assessment will be based on the following deliverables. Students must attain at least 50% in each assessment to pass the course.

#	Deliverable	Marks	Due Date
1	Initial Research Question		Week 2 (beginning of class)
2	Interim Research Proposal	10	Week 6 (beginning of class)

3	Final Research Proposal	40	Exam Period
3a	Research Poster	5	Exam Period
4	Class presentation on assigned or chosen topic (x2)	15	To be determined with student
4a	Initial slides and paper recommendations for #4		One week prior to #4
5	Class and Tutorial Participation	15	All Lectures
5a	Reading summaries	5	All Lectures
6	Reviews	10	Weeks 6 and 12

Deliverable #1 is a proposal for a research question to be investigated. It AT MOST 2 PAGES and MUST include AT LEAST 3 references to the relevant journal literature. It should describe the research topic, the research question, and why it is important to investigate the question. YOU SHOULD GET THE INPUT OF YOUR SUPERVISOR FOR THIS.

Deliverable #2 builds on deliverable #1. It includes a review of existing literature, and an initial description of the chosen research method. It contains AT MOST 15 pages (including title, references, and appendices), and MUST INCLUDE at least 20 references to the relevant literature. This literature review should be FOCUSED ON ANSWERING THE QUESTION proposed in deliverable #1. See the readings for week 2 for evaluation criteria.

Deliverable #3 builds on deliverable #2. It includes a review of existing literature, a description of the chosen research method and a DETAILED PLAN FOR CARRYING OUT THE RESEARCH. It also addresses potential limitations, usefulness and contribution of the research. It CONTAINS AT MOST 30 pages (including title, references, and appendices), and MUST INCLUDE at least 20 references to the relevant literature. 50% of the references must be to journal articles. No more than 10% of the references may be to Internet sites. The writing should be suitable for a conference as a work-in-progress paper. See the literature for week 2 for evaluation criteria.

> Deliverable #3a is a conference style poster presentation. During the exam period, all students will be exhibiting their proposed research in front of an audience of supervisors and other school faculty members.

Deliverable #4 is an in-class presentation. This presentation is to last about 45 minutes with subsequent 45 minutes of discussion time. The presentation is to be on a research method to be chosen in consultation with the lecturer, from one of the topics on this course outline). Students will also be required to lead the discussion on the topic. Students will be required to suggest two papers (article/chapter/conference paper) in the literature that contain good or bad examples/application of the research method or are in other ways related (e.g. a more in-depth discussion). The presentations should focus on the secondary literature and the two additional articles/chapters. Evaluation criteria include content, presentation, and discussion, among others.

> Deliverable #4a are the draft slides and recommended papers. Initial draft of slides and paper suggestions are due one week before the presentation.

Deliverable #5 is the class and tutorial participation. Students are required to attend ALL classes and ALL tutorials. For preparation and discussion, you MUST submit a ONE OR TWO PAGE discussion of the week's readings. This discussion should focus on HOW THE

READINGS ARE RELEVANT TO YOUR PLANNED RESEARCH. It should also demonstrate that you have read the readings for the week. This means, you should be SPECIFIC, not vague. You must submit this at least 24 hours before the class. Bring up points that seem particularly salient, fundamental, intriguing, troublesome, or perhaps debatable of confusing. A simple summary of the articles is NOT ENOUGH.

Deliverable #6 are two reviews of another student's interim and final report. Each of these should be AT MOST 5 PAGES (including title, references, and appendices). You will be assigned one other student in the class to review his or her assignment before they are handed in. Review these interim and final proposals according to the criteria covered in weeks 2 and 3, and the appropriate methodology. This will be an anonymous review.

Penalties

Work submitted after the deadline will incur a 5% penalty for each day late (including weekends and holidays). No work will be accepted that is more than a week late, leading to failure of the course. Mitigating circumstances such as illness etc. will be taken into account only with written documentation.

Plagiarism (see below) on any assessment item will at least lead to failure of the assessment item, and consequently failure of the course. Additionally, other penalties may be determined to be appropriate (see below).

Mandatory Course Requirements

Students must attend and participate in ALL classes and ALL tutorials. Failure to attend ALL classes and ALL tutorials will result in failure of the course with a K standing. Mitigating circumstances such as illness etc. will be taken into account only with written documentation.

Students must attain at least 50% of the marks on each assessment item. Failure to achieve 50% on any one assessment item will lead to failure of the course with a K standing.

Communication of Additional Information
Additional information will be communicated by email and Blackboard. Students are expected to check their VUW student email account, as well as Blackboard at least every 2 days.

Faculty of Commerce and Administration Offices
Railway West Wing (RWW) - FCA Student and Academic Services Office
The Faculty's Student and Academic Services Office is located on the ground and first floors of the Railway West Wing. The ground floor counter is the first point of contact for general enquiries and FCA forms. Student Administration Advisers are available to discuss course status and give further advice about FCA qualifications. To check for opening hours call the Student and Academic Services Office on (04) 463 5376.

Easterfield (EA) - FCA/Education/Law Kelburn Office
The Kelburn Campus Office for the Faculties of Commerce and Administration, Education and Law is situated in the Easterfield Building - it includes the ground floor reception desk (EA005) and offices 125a to 131 (Level 1). The office is available for the following:
  • Duty tutors for student contact and advice.

- Information concerning administrative and academic matters.
- Forms for FCA Student and Academic Services (e.g. application for academic transcripts, requests for degree audit, COP requests).
- Examinations-related information during the examination period.

To check for opening hours call the Student and Academic Services Office on (04) 463 5376.

General University Policies and Statutes

Students should familiarise themselves with the University's policies and statutes, particularly the Assessment Statute, the Personal Courses of Study Statute, the Statute on Student Conduct and any statutes relating to the particular qualifications being studied; see the Victoria University Calendar available in hard copy or under 'About Victoria' on the VUW home page at www.vuw.ac.nz.

Student and Staff Conduct

The Statute on Student Conduct together with the Policy on Staff Conduct ensure that members of the University community are able to work, learn, study and participate in the academic and social aspects of the University's life in an atmosphere of safety and respect. The Statute on Student Conduct contains information on what conduct is prohibited and what steps are to be taken if there is a complaint. For information about complaint procedures under the Statute on Student Conduct, contact the Facilitator and Disputes Advisor or refer to the statute on the VUW policy website at www.vuw.ac.nz/policy/studentconduct. The Policy on Staff Conduct can be found on the VUW website at www.vuw.ac.nz/policy/staffconduct.

Academic Grievances

If you have any academic problems with your course you should talk to the tutor or lecturer concerned; class representatives may be able to help you in this. If you are not satisfied with the result of that meeting, see the Head of School or the relevant Associate Dean; VUWSA Education Coordinators are available to assist in this process. If, after trying the above channels, you are still unsatisfied, formal grievance procedures can be invoked. These are set out in the Academic Grievances Policy which is published on the VUW website at www.vuw.ac.nz/policy/academicgrievances.

Academic Integrity and Plagiarism

Academic integrity is about honesty – put simply it means **no cheating**. All members of the University community are responsible for upholding academic integrity, which means staff and students are expected to behave honestly, fairly and with respect for others at all times.

Plagiarism is a form of cheating which undermines academic integrity. The University defines plagiarism as follows:

The presentation of the work of another person or other persons as if it were one's own, whether intended or not. This includes published or unpublished work, material on the Internet and the work of other student or staff.

It is still plagiarism even if you re-structure the material or present it in your own style or words.

Note: It is however, perfectly acceptable to include the work of others as long as that is acknowledged by appropriate referencing.

Plagiarism is prohibited at Victoria and is not worth the risk. Any enrolled student found guilty of plagiarism will be subject to disciplinary procedures under the Statute on Student Conduct and may be penalised severely. Consequences of being found guilty of plagiarism can include:

- an oral or written warning
- cancellation of your mark for an assessment or a fail grade for the course
- suspension from the course or the University.

Find out more about plagiarism, and how to avoid it, on the University's website at www.vuw.ac.nz/home/studying/plagiarism.html.

Notice of Turnitin Use
Student work provided for assessment in this course maybe checked for academic integrity by the electronic search engine <http://www.turnitin.com>. Turnitin is an on-line plagiarism prevention tool, which identifies material that may have been copied from other sources including the Internet, books, journals, periodicals or the work of other students. Turnitin is used to assist academic staff in detecting misreferencing, misquotation, and the inclusion of unattributed material, which maybe forms of cheating or plagiarism. At the discretion of the Head of School, handwritten work maybe copy typed by the School and subject to checking by Turnitin. You are strongly advised to check with your tutor or the course coordinator if you are uncertain about how to use and cite material from other sources. Turnitin will retain a copy of submitted materials on behalf of the University for detection of future plagiarism, but access to the full text of submissions will not be made available to any other party.

Students with Impairments
The University has a policy of reasonable accommodation of the needs of students with disabilities. The policy aims to give students with disabilities the same opportunity as other students to demonstrate their abilities. If you have a disability, impairment or chronic medical condition (temporary, permanent or recurring) that may impact on your ability to participate, learn and/or achieve in lectures and tutorials or in meeting the course requirements, please contact the Course Coordinator as early in the course as possible. Alternatively you may wish to approach a Student Adviser from Disability Support Services (DSS) to discuss your individual needs and the available options and support on a confidential basis. DSS are located on Level 1, Robert Stout Building, telephone (04) 463 6070, email disability@vuw.ac.nz. The name of your School's Disability Liaison Person is in the relevant prospectus or can be obtained from the School Office or DSS.

Student Support
Staff at Victoria want students to have positive learning experiences at the University. Each Faculty has a designated staff member who can either help you directly if your academic progress is causing you concern, or quickly put you in contact with someone who can. Assistance for specific groups is also available from the Kaiwawao Māori, Manaaki Pihipihinga or Victoria International.

In addition, the Student Services Group (email student-services@vuw.ac.nz) is available to provide a variety of support and services. Find out more at www.vuw.ac.nz/st_services/.

VUWSA employs Education Coordinators who deal with academic problems and provide support, advice and advocacy services, as well as organising class representatives and Faculty

delegates. The Education Office (tel. 04 463 6983 or 04 463 6984, email education@vuwsa.org.nz) is located on the ground floor, Student Union Building.

Manaaki Pihipihinga - Maori and Pacific Mentoring Programme (Faculty of Commerce and Administration)

This is a mentoring service for Maori and Pacific students studying at all levels. Weekly one hour sessions are held at the Kelburn and Pipitea Campuses in the Mentoring Rooms, 14 Kelburn Parade, and Room 210 and 211, Level 2, Railway West Wing. Sessions cover drafting and discussing assignments, essay writing, and any questions that may arise from tutorials and/or lectures. A computer suite networked to Cyber Commons is available for student use.

To register with Manaaki Pihipihinga, please contact one of the following:

Puawai Wereta   Fa'afoi Seiuli
Manaaki Pihipihinga Coordinator   Pacific Support Coordinator
Room 210, Level 2   Room 109 B
Railway West Wing   14 Kelburn Parade
Tel. (04) 463 8997   Tel. (04) 463 5842
Email: Puawai.Wereta@vuw.ac.nz   Email: Faafoi.Seiuli@vuw.ac.nz

The Pacific Support Coordinator is also available on the Pipitea Campus, Room 212, Level 2, Railway West Wing, every Thursday, 1-4pm. No appointment is necessary. You can either come in, email or phone with any issue that you need help with. Fa'afoi links Pacific students to the services and support they need while studying at Victoria.