Details of courses offered in Semester 1, 2023/24

Faculty of Education
The University of Hong Kong

Last update: July 20, 2023

Course Code	Course Title	Level (RPG/TPG)	Pre-requisites	Class Dates	Class Time	Venue	Course Syllabus URL	Contact Information (Name & Email)	Remarks (e.g. Please specify if the medium of instruction is NOT English)
EDUR7102	Statistical and Psychometric Analysis with R	RPG	No pre-requisite course is needed, but knowledge of basic statistics is necessary while some knowledge about regression analysis is preferred.	Sep 19, 26; Oct 3 and 10, 2023 (Tuesdays)	18:30 - 21:30	KKLG111	Please refer to the attached course outline	Ms. Triffic Cheung trifficc@hku.hk	/
EDUR7109	Factor Analysis	RPG	EDUR7102 Statistical and Psychometric Analysis with R or its equivalence (with consent from the instructor)	Oct 24, 31; Nov 7 and 14, 2023 (Tuesdays)	18:30 - 21:30	KKLG111	(same as above)	(same as above)	/
EDUR7110	Hierarchical Linear Models	RPG	• Sound knowledge of linear regression analysis (demonstrated through evidence of passing a course that covered simple and multiple linear regression theory and applications) • Sound knowledge of ANOVA (demonstrated through evidence of passing a course that covered ANOVA theory and applications)	Oct 26; Nov 2, 9 and 16, 2023 (Thursdays)	18:30 - 21:30	CPD-3.41	(same as above)	(same as above)	/
EDUR7114	Qualitative Interviewing	RPG	EDUR6010 Qualitative Research Methods I or EEDD6702 Research Methods II	Oct 12, 26; Nov 2 and 9, 2023 (Thursdays)	18:30 - 21:30	CPD-4.17	(same as above)	(same as above)	/
EDUR7115	Qualitative Data Analysis Through Coding	RPG	EDUR7114 Qualitative Interviewing	Nov 16, 23, 30; and Dec 7, 2023 (Thursdays)	18:30 - 21:30	JLG01	(same as above)	(same as above)	/

EDUR7117	Understanding Language and Social Interaction: An Introduction to Multimodal Conversation Analysis	RPG	• Prior knowledge with qualitative research and qualitative data collection is recommended. • Students from other faculties need to have some knowledge related to studies in language and social interaction before enrolling to this course.	Oct 30; Nov 6, 13 and 20, 2023 (Mondays)	18:30 - 21:30	CPD-4.16	(same as above)	(same as above)	/
EDUR8033	Technology as Cognitive Tools to Support Student Thinking and Learning	RPG	Vetting of the student's research background and relevance to the field of technology-enhanced learning	Oct 11, 25; Nov 1, 8, 15, 22, 29; and Dec 6, 2023 (Wednesdays)	18:30 - 21:30	MB249	(same as above)	(same as above)	/

Tentative and subject to change

THE UNIVERSITY OF HONG KONG
Faculty of Education
Academic Year 2023-24

EDUR7102 Statistical and Psychometric Analysis with R

Introduction

This course is designed to introduce statistical and psychometric analysis using the R programming platform and prepare students for methodological courses using the language. The R language is increasingly useful to quantitative and psychometric methods, and the knowledge and skills taught in the courses can be widely applied across a variety of disciplines. Knowledge of basic statistics is necessary while some knowledge about regression analysis is preferred before taking this course. Statistical topics covered include descriptive statistics, graphical representations, correlation and covariance, sampling distributions, confidence intervals, hypothesis testing, t-tests, chi-square test, one- and two-way analysis of variance, and simple and multiple regression analysis. Psychometric knowledge includes classical test theory and associated psychometric analysis such as reliability estimation, item analysis and differential item functioning. In addition to the theoretical and practical analysis, the courses are featured with hand-on programming exercises in a learning-by-doing approach.

Teacher(s)

Dr Jinsong CHEN

Course objectives

This course aims to help students conduct statistical and psychometric analysis using R. In addition to being able to carry out basic statistical analyses on their own, students who finish this course are expected be able to communicate and collaborate with others employing the language. This course also aims to provide the necessary background for students to take more advanced research methods courses (e.g., Factor Analysis, Structural Equation Modeling), as well as courses in Measurement. A variety of statistical and psychometric topics will be addressed by "doing it." That is, following the introduction and discussion of the topics (see the teaching plan below), students will be guided through data analysis with examples, and then asked to complete corresponding exercise of analysis. Specific goals of the courses are to help students: 1) develop skills for descriptive statistics, graphical representations, and matrix algebra with various R operations; 2) develop skills for statistical distributions, random sampling, and hypothesis testing with various R functions; 3) understand how to conduct ANOVA and regression analysis in R; and 4) develop skills in interpreting and communicating results of the analysis with the R language.

Course duration

12 hours

Course topics

The course has four (4) meetings each for three (3) hours. For each meeting, about two-third of time will be devoted to lectures, with the rest for computer laboratory. Below are the topics that will be covered in each meeting.

Meeting 1 will review basic concepts about statistical analysis and how they are related to quantitative research designs and methods. Critical difference between descriptive and inferential statistics will be focused, following by causal assumptions for statistical and psychometric modeling. Finally, basic knowledge and operations of the R platform will be introduced.

Meeting 2 will focus on basic statistical inference using R. We will cover knowledge about statistical distributions, random sampling, and hypothesis testing. Focuses will be given to inference for means and multiple-way tables. We will also introduce various R functions for data analysis and graphical representation, and how to write simple functions for your own purpose.

Meeting 3 will focus on parameter estimates and inference for ANOVA and linear regression using R. We will cover knowledge about one- and two-way ANOVA, and simple and multiple regression. Different standard errors and estimation methods will be briefly introduced. Finally, matrix operation and algebra will be covered from the perspective of correlation and covariance analysis.

Meeting 4 will introduce psychometric analysis using R. We will focus on classical test theory, including parallel tests, reliability coefficients and estimations, and different types of measurement errors. Finally, item analysis and differential item functioning will be introduced, together with different R packages for analysis.

Course learning outcomes

Upon successful completion of the course, students should be able to:

1. Develop skills for descriptive statistics, graphical representations, and matrix algebra with various R operations;
2. Develop skills for statistical distributions, random sampling, and hypothesis testing with various R functions;
3. Understand how to conduct ANOVA and regression analysis in R; and
4. Develop skills in interpreting and communicating results of the analysis with the R language

Key readings

- Moore, D. S., McCabe, G. P., & Craig, B. (2014). Introduction to the practice of statistics. (8th ed). New York: W. H. Freeman.
- Diez, D. M., Cetinkaya-Rundel, M., & Barr, C. D. (2019). OpenIntro statistics. (8th ed). Boston, MA, USA: OpenIntro. https://www.openintro.org/book/os/.
- Shafer, D. S., & Zhang, Z. (2012). Beginning statistics. Phylis-Barnidge publisher. https://2012books.lardbucket.org/books/beginning-statistics/.
- Handouts

Assessment methods

Assessment (weighting of each assessment)	Learning outcome(s) to be assessed
Students will have to complete four homework assignments for the materials covered in the four meetings. An assignment will be given after each meeting, and will be due the week after. The homework assignments will consist of problems pertaining to conceptual and analytical aspects, computer implementation, and interpretation of results. Each homework	Outcomes 1, 2, 3 and 4

assignment will be worth 25% of the final score. A final score of at least 80% is needed to pass the course.	

Minimum attendance requirement

3 out of 4 sessions

Course pre-requisite

No pre-requisite course is needed, but knowledge of basic statistics is necessary while some knowledge about regression analysis is preferred.

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EDUR7109 Factor Analysis

Introduction

This course is part of a series of courses designed to introduce the theory and practice of factor analysis (FA) and structural equation modeling (SEM). FA and SEM are statistical and psychometric models that can address both observed and latent variables flexibly and effectively. Analytically, they cover a family of multivariate statistical techniques to analyze structural models that go beyond regression analysis. Methodologically, they offer a quantitative framework for causal modeling ranging from the exploratory to confirmatory ends. The courses focus on both theoretical knowledge to understand a variety of topics and practical skills that can be widely applied in social and behavioral research. Although most in-class examples come from education or psychology, the knowledge and skills taught in the courses can be extensively used across a variety of disciplines. In addition to the theoretical and practical aspects, the courses are featured with hand-on computer programming and exercises in a learning-by-doing approach.

Teacher(s)

Dr Jinsong CHEN

Course objectives

This course will focus on both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) as multivariate statistical techniques for research method and data analysis. The main objective of the course is to teach students basic yet important theory and practice of factor analysis by "doing it." That is, following the introduction and discussion of the topics (see the teaching plan below), students will be guided through research design and data analysis with examples, and then be taught with complete analysis and supplemental exercise. The goals of the courses are to help students: 1) understand the concepts and principles of factor analysis and key methodological aspects when conducting research with factor analysis; 2) recognize the appropriate use of factor analytic models and procedures of implementation; 3) develop skills to conduct factor analysis with software packages; and 4) develop skills in interpreting and communicating results of the analysis. Throughout, Mplus and the R programming platform with different packages is utilized for all analyses.

Course duration

12 hours

Course topics

The course has four (4) meetings each for three (3) hours. For each meeting, about two-third of time will be devoted to lectures, with the rest for computer laboratory. Below are the topics that will be covered in each meeting.

Meeting 1 will introduce the basic concepts of latent variable modeling, factor analysis in general, and the common factor model. As statistical and psychometric models, FA is typically analyzed with the

covariance structure. It also involves different design assumptions that lead to the exploratory or confirmatory approaches. We will conceptually introduce and compare both approaches.

Meeting 2 will focus on EFA. Extracting the number of factors is the first and an important step in EFA, and there are many extraction methods and criteria that perform differently across various settings. Then, we will introduce factor rotation with different rotation methods. It will be followed by conventional procedures to conduct the analysis and interpret the result. Finally, cautions and criticism against EFA will be discussed.

Meeting 3 will focus on the theoretical perspective of CFA. It includes basic concepts and fundamentals of CFA such as model specification, assumptions, identification, and evaluation. A variety of didactic models will be used for illustration and discussions. We will also introduce the knowledge about model estimation, fit evaluation, modification, and equivalent models.

Meeting 4 will focus on the practical perspective of CFA. Using empirical examples and real data, we will illustrate how to conduct the following procedures: model specification and justification, fit evaluation and modification, model comparison, measurement reliability, parameter interpretation, and parameter testing and constraint. We will also introduce and exercise computer programming, and briefly discuss common problems and pitfalls in CFA with possible solutions.

Course learning outcomes

Upon successful completion of the course, students should be able to:

1. Understand the concepts and principles of factor analysis and key methodological aspects when conducting research with factor analysis;
2. Recognize the appropriate use of factor analytic models and procedures of implementation;
3. Develop skills to conduct factor analysis with software packages; and
4. Develop skills in interpreting and communicating results of the analysis.

Key readings

- Chen, J. (2023). *Theory and Practice of Factor Analysis and Structural Equation Modeling*. Handouts.
- Thompson, B. (2004). *Exploratory and confirmatory factor analysis: Understanding concepts and applications*. Washington, DC, 10694(000).
- Brown, T. A. (2015). *Confirmatory factor analysis for applied research (2nd ed.)*. New York: The Guilford Press.
- Child, D. (2006). *The essentials of factor analysis (3th ed.)*. London: Bloomsbury Publishing.
- Mulaik, S. A. (2010). *Foundations of factor analysis (2nd ed.)*. Boca Raton, FL: Chapman & Hall/CRC.

Assessment methods

Assessment (weighting of each assessment)	Learning outcome(s) to be assessed
Students will have to complete four homework assignments for the materials covered in the four meetings. An assignment will be given after each meeting, and will be due the week after. The homework assignments will consist of problems pertaining to conceptual and analytical aspects, computer implementation, and interpretation of results. Each homework	Outcomes 1, 2, 3 and 4

assignment will be worth 25% of the final score. A final score of at least 80% is needed to pass the course.	

Minimum attendance requirement

3 out of 4 sessions

Course pre-requisite

EDUR7102 Statistical and Psychometric Analysis with R or its equivalence (with consent from the instructor)

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EDUR7110 Hierarchical Linear Models

Introduction

Multilevel models (also called hierarchical linear models or linear mixed models) are often necessary to analyze clustered data, such as when students are nested within classrooms and schools, or when the effects of country characteristics are to be examined in international large-scale assessments. This course introduces multilevel modeling as a tool for analyzing clustered data. It aims to enable students to understand and use multilevel modeling to analyze cross-sectional data.

The course will be conducted over four meetings (each 3 hours). Students will learn theoretical knowledge of multilevel models and acquire the skills to implement common multilevel models. Worked examples will be used and students will have the opportunity to implement multilevel models in a software application (mostly using R and with additional examples for implementation in Mplus). Students will also discuss empirical articles and complete two homework assignments.

By the end of the course, students will: 1) have the conceptual and statistical knowledge needed to understand and examine different multilevel models; 2) understand the assumptions, requirements and limitations of multilevel modeling; 3) be able to perform the analysis of clustered data using a statistical software package; and 4) be able to interpret the statistical results.

Teacher(s)

Dr Frank REICHERT

Course objectives

This course introduces multilevel modeling as a tool for analyzing clustered data. It aims to enable students to understand and use multilevel modeling to analyze cross-sectional data.

Course duration

12 hours

Course topics

Meeting 1: Introduction to multilevel models
During this meeting, students will learn about clustered data / data hierarchies, multilevel theories, and when multilevel modeling is and is not appropriate / required. Similarities and differences between multilevel models and (single level) linear regression as well as analysis of variance will be discussed. Partitioning of variance in an outcome and basic two-level model specification will be covered.

Meeting 2: Two-level models
During this meeting, students will learn different two-level models. Specifically, random intercept models, random slopes (coefficients) models, and two-level models with cross-level interactions will be discussed in detail.

Meeting 3: Centering variables and evaluating multilevel models

The third meeting will cover centering strategies and composition variables in multilevel models. Students will also learn more about model estimation (e.g., estimation methods), how to evaluate model fit and parameter estimates, and how to compare multilevel models.

Meeting 4: Assumptions, reporting, and extensions

In the final meeting, students will learn model building strategies, what the assumptions of the hierarchical linear model are, and how to examine whether the assumptions are met. We will also discuss issues related to sample size and power and how to report the results from multilevel analysis. The meeting will also offer a brief outlook on extensions of the two-level model (e.g., three-level models, cross-classified and multiple membership data structures).

Course learning outcomes

Upon completion of this course, students should have the:

1. Ability to critically evaluate when it is appropriate to use multilevel models;
2. Understanding of the conceptual and mathematical basis of multilevel models;
3. Capacity to model a variety of clustered data and estimate different multilevel models in a software package; and
4. Skills in interpreting and communicating results of the multilevel analyses.

Key readings

Mandatory readings

- Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods*, *12*(2), 121–138. https://doi.org/10.1037/1082-989X.12.2.121
- McCoach, D. B. (2018). Multilevel modeling. In G. R. Hancock, L. M. Stapleton, & R. O. Mueller (Eds.), *The reviewer's guide to quantitative methods in the social sciences* (2nd ed., pp. 292–312). Routledge.
- Peugh, J. L. (2010). A practical guide to multilevel modeling. *Journal of School Psychology*, *48*(1), 85–112. https://doi.org/10.1016/j.jsp.2009.09.002
- Snijders, T. A. B., & Bosker, R. J. (2012). *Multilevel analysis: An introduction to basic and advanced multilevel modeling* (2nd ed.). Sage. (only selected chapters)
- Stegmueller, D. (2013). How many countries for multilevel modeling? A comparison of frequentist and Bayesian approaches. *American Journal of Political Science*, *57*(3), 748–761. https://doi.org/10.1111/ajps.12001

Optional/supplementary readings

- Brincks, A. M., Enders, C. K., Llabre, M. M., Bulotsky-Shearer, R. J., Prado, G., & Feaster, D. J. (2017). Centering predictor variables in three-level contextual models. Multivariate Behavioral Research, 52(2), 149–163. https://doi.org/10.1080/00273171.2016.1256753
- Finch, W. H., Bolin, J. E., & Kelley, K. (2014). *Multilevel modeling using R* (2nd ed.). CRC Press. (only selected chapters)
- Fielding, A., & Goldstein, H. (2006). *Cross-classified and multiple membership structures in multilevel models: An introduction and review*. University of Birmingham. http://dera.ioe.ac.uk/6469/1/RR791.pdf
- Garson, G. D. (2020). *Multilevel modeling: Applications in Stata®, IBM® SPSS®, SAS®, R, & HLM™*. Sage. (only selected chapters)

- Goldstein, H. (2011). *Multilevel statistical models* (4th ed.). Wiley. (only selected chapters)
- Heck, R. H., & Thomas, S. L. (2020). *An introduction to multilevel modeling techniques: MLM and SEM approaches* (4th ed.). Routledge. (only selected chapters)
- Hox, J. J., Moerbeek, M., & van Schoot, R. de (2017). *Multilevel analysis: Techniques and applications* (3rd ed.). Routledge. (only selected chapters)
- Kreft, I. G. G., & Leeuw, J. de (1998). *Introducing multilevel modeling*. Sage. (only selected chapters)
- Peugh, J. L. (2014). Conducting three-level cross-sectional analyses. *Journal of Early Adolescence*, *34*(1), 7–37. https://doi.org/10.1177/0272431613498646
- Rabe-Hesketh, S., & Skrondal, A. (2006). Multilevel modeling of complex survey data. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, *196*(4), 805–827. https://doi.org/10.1201/9781420035889.ch15
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Sage. (only selected chapters)

Specific book chapters and additional weekly readings (for weekly forum posts) will be announced during the course.

Assessment methods

Assessment (weighting of each assessment)	Learning outcome(s) to be assessed
Two homework assignments (30% each) Students will have to complete two homework assignments for the materials covered in the four meetings. An assignment will be given after the second and another after the fourth meeting. Each assignment will be due before the next course meeting. The homework assignments will consist of problems pertaining to computation, computer implementation, and interpretation of results. Each homework assignment will be worth 30% of the final score.	Outcomes 1, 2, 3 and 4
Forum posts after each meeting (10% each) During the week after each meeting, students will have to read one theoretical article or a short empirical article reporting an application of the multilevel method discussed in the respective meeting and then submit short forum posts. Forum posts need to relate to methodological issues and can be, for instance, questions about the methods or analysis, methodological criticism and suggestions for improvement of the analysis, clarifications of the reported analysis, as well as responses to other students' questions (e.g., corrections or answers to questions on the analysis). Each week these posts will be worth 10% of the final score; at least two short posts are required each week and they will be assessed based on their quality and on the diversity over the entire semester (e.g., a student should not only post questions but also respond to questions).	Outcomes 1, 2 and 4

Note: A final score of at least 80% is needed to pass the course.

Minimum attendance requirement

100%

Course pre-requisite

- Sound knowledge of linear regression analysis (demonstrated through evidence of *passing* a course that covered simple and multiple linear regression theory and applications)
- Sound knowledge of ANOVA (demonstrated through evidence of *passing* a course that covered ANOVA theory and applications)

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EDUR7114 Qualitative Interviewing

Introduction

This course covers the main theoretical foundations as well as some practical considerations in collecting interview data in qualitative research. It is aimed at graduate students who are already well familiar with theory and practice in qualitative inquiry and want to specifically deepen their understanding of interviewing as perhaps the most widely used qualitative data collection procedure. The starting point of the course is a consideration of how constructivist epistemological perspectives shape the foundation of qualitative interviews. On this basis, the course proceeds to address theoretical aspects of conceptualizing and planning interviews in qualitative studies as well as some practical issues in interviewing. Students' involvements in this course centrally include reading some essential texts on qualitative interviewing, critically reflecting on these reading sources based on their own views and experiences, and employing their theoretical understanding in conducting a few qualitative interviews.

NOTE: This is not an introduction to research methods or even an advanced course of qualitative methodology. It is a specialized course for students who have prior ideas and/or engagement with qualitative inquiry and intend to specifically focus on interviewing and gain more profound insights into qualitative data collection through interviews.

Teacher(s)

Dr Seyyed-Abdolhamid MIRHOSSEINI

Course objectives

The course aims to provide insights and abilities that can enhance students' understanding of and engagement with data collection through qualitative interviews. On the one hand, the goal of the course is to equip students with a profound understanding of theoretical and conceptual bases of interviewing and interview data based on philosophical foundations of qualitative research. On the other hand, the purpose of the curse is to help students employ their theoretical views in planning actual interviews and considering practical aspects of conducting qualitative interviews. More specifically, the course sets as its goals to provide students with the opportunity to (1) understand how qualitative interviewing is connected with the epistemological foundations of qualitative inquiry, (2) reflect on the difference between qualitative research questions and more specific interview questions, and develop preliminary plans for interviews, (3) hone their interviewing ability based on a conceptualization of qualitative interviews as constructivist processes, and (4) learn how to deal with some important practical challenges of collecting interview data in qualitative research. Achieving these goals can equip students with the theoretical knowledge and practical ability required for understanding and conducting qualitative interviews.

Course duration

12 hours

Course topics

Section 1: Qualitative epistemologies and research questions
Section 2: From research questions to interview questions/plans
Section 3: Co-constructing the interview process and outcome
Section 4: Some practicalities of conducting qualitative interviews

Course learning outcomes

Upon completion of this course, students should be able to:

1. Discuss how qualitative interviewing as a data collection procedure is connected with the constructivist epistemological foundations of qualitative inquiry;
2. Differentiate overarching qualitative research questions and more specific interview questions and be able to develop interview plans on this basis;
3. Conceptualize qualitative interviews as processes of co-constructing ideas and understandings by researchers and interview participants; and
4. Understand the main practical challenges in collecting data through qualitative interviewing and be able to tackle them in the process of conducting actual interviews.

Key readings

REQUIRED READING

Section 1. Qualitative Epistemologies and Research Questions

- Mirhosseini, S. A. (2020). *Doing qualitative research in language education*. London: Palgrave Macmillan, **Chapter 1, Ways of knowing and knowledging**; **Chapter 2, Conceptualizing research questions**.

Section 2. From Research Questions to Interview Questions/Plans

- Tracy, S. J. (2020). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact* (2nd ed.). Malden: Blackwell, **Chapter 7, Interview planning and design: Structuring, wording, and questioning**.

Section 3. Co-constructing the Interview Process and Outcome

- Josselson, R. (2013). *Interviewing for qualitative inquiry: A relational approach*. New York: The Guilford Press, **Chapter 1, The foundations of interviewing as qualitative inquiry**.

Section 4. Some Practicalities of Conducting Qualitative Interviews

- Tracy, S. J. (2020). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact* (2nd ed.). Malden: Blackwell, **Chapter 8, Interview practice: Embodied, mediated, and focus-group approaches**.

FURTHER READING

Section 1. Qualitative Epistemologies and Research Questions

- Kress, T. M. (2011). *Critical praxis research: Breathing new life into research methods for teachers*. Dordrecht: Springer, **Chapter 3, Positivist research, death of the self**.
- Agee, J. (2009). **Developing qualitative research questions: A reflective process**. *International Journal of Qualitative Studies in Education*, 22(4),431–447.

Section 2. From Research Questions to Interview Questions/Plans

- Josselson, R. (2013). *Interviewing for qualitative inquiry: A relational approach*. New York: The Guilford Press, **Chapter 3, Planning the interview**.
- Mirhosseini, S. A. (2020). *Doing qualitative research in language education*. London: Palgrave Macmillan, **Chapter 5, Collecting interview data**.

Section 3. Co-constructing the Interview Process and Outcome

- Mason, J. (2002). **Qualitative interviewing: Asking, listening and interpreting**. In T. May (Ed.), *Qualitative research in action* (pp. 225–241). London: Sage.
- Foley, L. (2012). **Constructing the respondent**. In J. Gubrium, J. Holstein, A. Marvasti, & K. McKinney (Eds.), *The Sage handbook of interview research: The complexity of the craft* (2nd ed.) (pp. 305–316). London: Sage.

Section 4. Some Practicalities of Conducting Qualitative Interviews

- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). San Francisco: Jossey-Bass, **Chapter 5, Conducting effective interviews**.
- Taylor, S. J., Bogdan, R., & DeVault, M. L. (2016). *Introduction to qualitative research methods: A guidebook and resource* (4th ed.). Hoboken: Wiley, **Chapter 4, In-Depth Interviewing**.

SOURCES FOR IN-DEPTH STUDY

- Gubrium, J., Holstein, J., Marvasti, A., & McKinney, K. (Eds.). (2012). *The Sage handbook of interview research: The complexity of the craft* (2nd ed.). London: Sage.
- Josselson, R. (2013). *Interviewing for qualitative inquiry: A relational approach*. New York: The Guilford Press.
- Mann, S. (2016). *The research interview: Reflective practice and reflexivity in research processes*. London: Palgrave Macmillan.
- Roulston, K. (2010). *Reflective interviewing: A guide to theory and practice*. London: Sage.
- Roulston, K. (2019). *Interactional studies of qualitative research interviews*. Amsterdam: John Benjamins.
- Schostak, J. (2006). *Interviewing and representation in qualitative research*. Berkshire: Open University Press.
- Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (3rd ed.). New York: Teachers College Press.

Assessment methods

Assessment (weighting of each assessment)	Learning outcome(s) to be assessed
Formative assessment (50%) Students will write reflective reviews of the covered materials (up to 500 words for each one of the four sections). The required texts are to be read prior to each class meeting and students are expected to participate in class discussions with their questions, comments, and reflections linking the discussions to their own research. The review note for each section and participation in the class meeting for that section will be assessed as one unit. Note: Three Pass scores out of four needed for overall Pass	Outcomes 1, 2, 3 and 4

Summative assessment (50%) Based on the issues covered in the course, students will conduct at least one qualitative interview related to their own area of study and will report it along with the transcript. The format and details of the report will be specified during class meetings. (Up to 2000 words, all inclusive)	Outcomes 1, 2, 3 and 4

Minimum attendance requirement

3 out of 4 sessions – Students who fail to attend at least three sessions will fail the course.

Course pre-requisite

EDUR6010 Qualitative Research Methods I

OR

EEDD6702 Research Methods II

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EDUR7115 Qualitative Data Analysis Through Coding

Introduction

This course focuses on different stages of coding as the most widely used procedure of qualitative data analysis. The course is designed for graduate students who are already well familiar with the theory and practice of qualitative inquiry and have been engaged in collecting at least one type of qualitative data but want to specifically deepen their understanding of data analysis through coding. The course starts with an overview of the nature of qualitative research questions and the underlying logic and thinking process of coding as a method of data analysis. Then it proceeds to cover the (manual or computer-assisted) qualitative data coding in three stages: early steps of dealing with qualitative data through initial (open) coding; focused and axial coding in search of emerging patterns and themes; and developing new data-based concepts and ideas through theoretical coding. Students' involvements during the course centrally include reading some essential texts on data analysis through coding, critically reflecting on these reading sources based on their own views and experiences, and employing their theoretical understanding in the actual process of a small-scale data analysis project.

NOTE: This is not an introduction to qualitative research or even an advanced course of qualitative methodology. It is a specialized course for students who have prior ideas and/or engagement with qualitative data and intend to specifically gain profound insights and abilities regarding qualitative data analysis through coding procedures.

Teacher(s)

Dr Seyyed-Abdolhamid MIRHOSSEINI

Course objectives

The course aims to provide insights and activities that can enhance students' understanding and ability of analyzing qualitative data through coding procedures. Along with involving students in theoretical reflections and deepening their views of the nature of data and the features of data analysis in qualitative inquiry, the course engages them in the actual process of analyzing their own collected bodies of data in different stages of (manual or computer-assisted) data coding. More specifically, the course sets as its goals to provide students with the opportunity to (1) understand the logic of categorical thinking as the theoretical foundation of qualitative data analysis through coding, (2) learn how to engage with their raw qualitative data in the process of initial (open) coding, (3) further analyze their initial codes and look for emerging patterns and themes through focused and axial coding, and (4) develop new understandings and conceptualizations grounded in their qualitative data through theoretical coding. Involvement in a learning process based on these objectives can equip students with the required theoretical understanding and practical ability to analyze different bodies of qualitative data through coding.

Course duration

12 hours

Course topics

Section 1: Research questions and categorical thinking
Section 2: Initial coding of raw qualitative data
Section 3: Focused and axial coding of early codes
Section 4: Theoretical coding toward conceptualization

Course learning outcomes

Upon completion of this course, students should be able to:

1. Discuss similarity-based (categorical) approaches as the basis of coding methods in qualitative data analysis;
2. Engage with raw qualitative data and conduct preliminary analysis of bodies of data collected through procedures like interviews and observations in initial (open) coding;
3. Work with initially coded qualitative data in the process of focused and axial coding and look for patters of ideas emerging from data in search of coherent conceptual themes; and
4. Conceptualize their findings and address their research problem based on emerging concepts grounded in their qualitative data.

Key readings

REQUIRED READING

Section 1. Research Questions and Categorical Thinking

- Mirhosseini, S. A. (2020). *Doing qualitative research in language education*. London: Palgrave Macmillan, **Chapter 2, Conceptualizing research questions**.
- Freeman, M. (2017). *Modes of thinking for qualitative data analysis*. London: Routledge, **Chapter 2, Categorical thinking**.

Section 2. Initial Coding of Raw Qualitative Data

- Tracy, S. J. (2020). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact* (2nd ed.). Malden: Blackwell, **Chapter 9, Data analysis basics: A phronetic iterative approach**.

Section 3. Focused and Axial Coding of Early Codes

- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London: Sage, **Chapter 3, Coding in grounded theory practice**.

Section 4. Theoretical Coding Toward Conceptualization

- Mirhosseini, S. A. (2020). *Doing qualitative research in language education*. London: Palgrave Macmillan, **Chapter 7, Data analysis through coding**.

FURTHER READING

Section 1. Research Questions and Categorical Thinking

- Bazeley, P. (2013). *Qualitative data analysis: Practical strategies*. London: Sage, **Chapter 1, Preparing the way: Laying the foundations for analysis**.
- Maxwell, J. A. & Chmiel, M. (2014). **Notes toward a theory of qualitative data analysis**. In U. Flick. (Ed.), *The Sage handbook of qualitative data analysis* (pp. 21–34). London: Sage.

Section 2. Initial Coding of Raw Qualitative Data

- Auerbach, C. & Silverstein, L. (2003). *Qualitative data: An introduction to coding and analysis*. New York: New York University Press, **Chapter 4, Coding 1: The basic ideas**, and **Chapter 5, Coding 2: The Mechanics**.
- Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). London: Sage, **Chapter 5, The logic of grounded theory coding practices and initial coding**.

Section 3. Focused and Axial Coding of Early Codes

- Kelle, U. (2007). **The development of categories: different approaches in grounded theory**. In A. Bryant & K. Charmaz (Eds.), *The Sage handbook of grounded theory* (pp. 191–213). London: Sage.
- Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). London: Sage, **Chapter 6, Focused coding and beyond**.

Section 4. Theoretical Coding Toward Conceptualization

- Thornberg, R. & Charmaz, K. (2014). **Grounded theory and theoretical coding**. In U. Flick. (Ed.), *The Sage handbook of qualitative data analysis* (pp. 153–169). London: Sage.
- Kelle, U. (2007). **Theorization from data**. In U. Flick. (Ed.), *The Sage handbook of qualitative data analysis* (pp. 554–568). London: Sage.

SOURCES FOR IN-DEPTH STUDY

- Auerbach, C. & Silverstein, L. (2003). *Qualitative data: An introduction to coding and analysis*. New York: New York University Press.
- Bazeley, P. (2013). *Qualitative data analysis: Practical strategies*. London: Sage.
- Bryant, A. (2017). *Grounded theory and grounded theorizing: Pragmatism in research practice*. New York: Oxford University Press.
- Bryant, A. & Charmaz, K. (Eds.). (2019). *The SAGE handbook of current developments in grounded theory*. London: Sage.
- Saldana, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). London: Sage.
- Strauss, A. (1987). *Qualitative analysis for social scientists*. Cambridge: Cambridge University Press.

Assessment methods

Assessment (weighting of each assessment)	Learning outcome(s) to be assessed
Formative assessment (50%) Students will write reflective reviews of the covered materials (up to 500 words for each one of the four sections). The required texts are to be read prior to each class meeting and students are expected to participate in class discussions with their questions, comments, and reflections linking the discussions to their own research. The review note for each section and participation in the class meeting for that section will be assessed as one unit. Note: Three Pass scores out of four needed for overall Pass	Outcomes 1, 2, 3 and 4
Summative assessment (50%) Based on the issues covered in the course, students will work on a body of	Outcomes 1, 2, 3 and 4

at least one type of qualitative data related to their own area of study and analyze it through different stages of qualitative data coding. They will report their analysis process and the emerging themes and concepts. The format and details of the report will be specified during class meetings. (Up to 2000 words, all inclusive)	

Minimum attendance requirement

3 out of 4 sessions – Students who fail to attend at least three sessions will fail the course.

Course pre-requisite

EDUR7114 Qualitative Interviewing

(Version of June 30, 2023)

Tentative and subject to change

THE UNIVERSITY OF HONG KONG
Faculty of Education
Academic Year 2023-24

EDUR7117 Understanding Language and Social Interaction: An Introduction to Multimodal Conversation Analysis

Introduction

This is a two-part course that aims to introduce students to the micro-analysis of video recordings of real world social interaction. The aim is to provide students with an appreciation and understanding of the importance of examining actual communicative encounters in order to develop understandings of social interaction in general.

Students will be introduced to Multimodal Conversation Analysis (MCA), as well as the Ethnomethodological (EM) theoretical approach which underpins MCA. In the initial lesson, students will consider some general principles of social interaction. In the remaining lessons, interaction in specific contexts will be examined. This will include intercultural interaction, multilingual interaction, and interaction involving digital technologies. Students will also consider how this research is applied to improve real life communicative practice.

The sessions for this module will not be taught in a lecture style, but will be very much interactive. This will require full participation from all members of the group, both before class and in class, in the form of participation in practical activities, discussions, transcription training and collaborative data analysis The reasoning behind this is that the best way to learn about micro-analysis is to do micro-analysis.

Teacher(s)

Dr Kevin TAI

Course objectives

The objectives of the course are to help students to:

1. Develop an understanding of the theoretical principles underpinning the analysis of social Interaction;
2. Develop an understanding of how – and why – data is collected and analysed for social interaction Research;
3. Develop an understanding of the theoretical implications of this approach for understandings of communication in specific contexts, and social interaction more broadly; and
4. Develop an understanding of the practical implications of this approach for various contexts, including intercultural communication and second language teaching and learning.

Course duration

12 hours

Course topics

Session 1: Introduction to the course: Why Conversation Analysis?
- Discussion of the use of Conversation Analysis to analyse interactional features:
- Turn-taking
- Sequential Organisations
- Repair
- Adjacency Pairs
- Conversation Analysis Procedures

Session 2: Collection and Transcribing Conversation for Analysis
- CA Transcription Conventions
- Transcribing words, prosody, other speech sounds, simultaneous talk and pauses

Session 3: Language and Nonverbal Communication
- Multimodality and Social Semiotics
- Interactional Competence
- Transcribing Non-Verbal Elements of Talk
- Workshop: Doing Multimodal Conversation Analysis

Session 4: Applications of Social Interaction Research
- Conversation Analysis as a Social Science Research Methodology
- Course Summary
- Workshop: Further Practice in Doing Multimodal Conversation Analysis

Course learning outcomes

Upon successful completion of this course, students will have the knowledge and skills to:

1. Collect and transcribe naturally-occurring spoken interaction;
2. Summarise and critically review research into language and social interaction;
3. Analyse the data according to the principles and practices outlined throughout the course; and
4. Make analytic observations and arguments grounded in observations of the data.

Key readings

- Hutchby, I. and Woofiitt, I. (2005). *Conversation Analysis (Second Edition)*. London: Polity Press.
- Markee, N. (2000). *Conversation Analysis.* New Jersey: Lawrence Erlbaum.
- Mondada, L. (2018). Multiple temporalities of language and body in interaction: Challenges for transcribing multimodality. *Research on Language and Social Interaction*, 51, 85–106.
- Seedhouse, P. (2004). *The Interactional Architecture of the Language Classroom: A Conversation Analysis Perspective.* London: Blackwell.
- Tai, K. W. H. (2023). *Multimodal Conversation Analysis and Interpretative Phenomenological Analysis: A Methodological Framework for Researching Translanguaging in Multilingual Classrooms.* London: Routledge.
- ten Have, P. (2007). *Doing Conversation Analysis (Second Edition).* London: Sage.

Assessment methods

Assessment (weighting of each assessment)	Learning outcome(s) to be assessed
A Small Research Study (100%) The assessment has three components: 1. Collect some video data from a naturally-occurring setting (i.e. something that would have happened even if you weren't doing this assignment) 2. Transcribe a segment of the data you collected. The transcript should be at least around one page of A4 (font size 12), and should employ the Multimodal Conversation Analysis transcript conventions demonstrated throughout the course. 3. Write an analysis (approximately 1,500- 2,500 words) on the data selected. Students will analyse the data using the methodological framework of Multimodal Conversation Analysis. Students will also be required to relate their own analytic observations to previous theory and research findings within the field, as well as to discuss their observations in broader theoretical and/or practical terms.	Outcomes 1, 2, 3 and 4

Minimum attendance requirement

3 out of 4 sessions – Students who fail to attend at least three sessions will fail the course.

Course pre-requisite

Prior knowledge with qualitative research and qualitative data collection is recommended.

(Version of June 30, 2023)

Tentative and subject to change

THE UNIVERSITY OF HONG KONG
Faculty of Education
Academic Year 2023-24

EDUR8033 Technology as Cognitive Tools to Support Student Thinking and Learning

Introduction

The course focuses on using technology as cognitive tools to improve student thinking and learning. The course begins with an overview of technology as cognitive tools for learning. Then, Sessions 2-7 focus on discussions around several critical research themes in the field. In each theme, participants will be introduced to the underpinning theories and practical considerations for the use of technology as cognitive tools for learning and development. Teachers will guide participants to link the theoretical concepts and techniques with their research areas or topics to facilitate application and analysis. Relevant cognitive tools (such as cognitive mapping and visible thinking tools) and their affordances for student thinking and learning will be discussed. In the final session, participants will demonstrate the application of knowledge learnt from the course to educational practices. Participants will give a group presentation, showing the use of technology or the design of technology-mediated approaches to support student thinking and learning in a specific context or scenario.

Teacher(s)

Professor Maggie WANG, Dr Shihui FENG and Dr Chenwei ZHANG

Course objectives

This course aims to provide novice researchers with foundational knowledge of learning and cognitive development with the use of technology to support student thinking and learning. One of the effective ways of using technology in education is to use technology as cognitive tools or mindtools (Jonassen, 2000) to engage student in high order thinking and meaningful learning. As we will see, no single theory and technology can account for all aspects of human learning and cognitive development. By looking at a variety of theories and technologies, this course aims to help novice researchers achieve the following objectives:

1. To identify a range of principles, perspectives, approaches, and tools that may help analyze and improve student thinking and learning in a variety of contexts;
2. To analyze the affordances of technology as cognitive tools for improving student thinking and learning; and
3. To apply knowledge to practice through the design of relevant applications to enhance student thinking and learning in multiple contexts.

Course duration

24 hours

Course topics

1. Technology as cognitive tools for thinking and learning (Prof. Maggie Wang)
2. Meaningful learning and high order thinking with technology (Prof. Maggie Wang)
3. Systems thinking and social network analysis with technology (Dr Shihui Feng)
4. Analytical thinking by making sense of data with technology (Dr Shihui Feng)

5. Computational thinking with educational technology (Dr Chenwei Zhang)
6. Spatial and visual thinking with mapping, 3D models, and mixed reality (Prof. Maggie Wang)
7. Creativity and thinking skills with the support of technology (Prof. Maggie Wang)
8. Group presentations and reflection (Prof. Maggie Wang)

Course learning outcomes

At the end of the course, students should have achieved the following outcomes:

1. Demonstrate the understanding of multiple principles, perspectives, and tools that may help improve student thinking and learning in a variety of contexts;
2. Analyze the affordances of technology as cognitive tools to enhance student thinking and learning; be able to justify the choice of technologies/tools in relation to learning needs or problems; and
3. Apply knowledge to practice by using technology to support student thinking and learning in a specific context or scenario; be able to justify the application in relation to learning needs or problems.

Key readings

- Aarnio, K., & Lindeman, M. (2005). Paranormal beliefs, education, and thinking styles. *Personality and individual differences, 39*(7), 1227-1236.
- Abrami et al. (2014). Strategies for teaching students to think critically: A meta-analysis. *Review of Educational Research, 85*(2), 275-314.
- Arnold, R. D., & Wade, J. P. (2015). A definition of systems thinking: A systems approach. *Procedia computer science, 44*(2015), 669-678.
- Ausubel, D. (1963). *The psychology of meaningful verbal learning*. New York: Grune & Stratton.
- Ching, Y. H., Hsu, Y. C., & Baldwin, S. (2018). Developing computational thinking with educational technologies for young learners. *TechTrends, 62*(6), 563-573.
- Cobb, P. J., Rogers, J. R., Ford, B., Blasdel, G. P., & Renninger, S. (2019). Mapping historical texts in the classroom: The Anatolian travelers project. *Cartographic Perspectives, 93*, 14–33.
- García-Peñalvo, F. J., & Mendes, A. J. (2018). Exploring the computational thinking effects in pre-university education. *Computers in Human Behavior, 80*, 407-411.
- Jonassen, D. H. (2000). *Computers as mindtools for schools: Engaging critical thinking* (2nd ed.). Upper Saddle River, N.J.: Merrill.
- Novak, J. D., & Cañas, A. J. (2006). The origins of the concept mapping tool and the continuing evolution of the tool. *Information visualization*, 5, 175-184.
- Provost, F., & Fawcett, T. (2013). Data science and its relationship to big data and data-driven decision making. *Big data, 1*(1), 51-59.
- Sternberg, R. J. (2006). The nature of creativity. *Creativity research journal, 18*(1), 87-98.
- Minhong Wang, Bian Wu, Paul A. Kirschner, & J. Michael Spector (2018). Using cognitive mapping to foster deeper learning with complex problems in a computer-based environment. *Computers in Human Behavior, 87*, 450-458.
- Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications*. Cambridge; New York: Cambridge University Press.
- Zikas, P., Bachlitzanakis, V., Papaefthymiou, M., Kateros, S., Georgiou, S., Lydatakis, N., & Papagiannakis, G. (2016). *Mixed reality serious games and gamification for smart education*. Reading: Academic Conferences International Limited.

Assessment methods

Assessment (weighting of each assessment)	Learning outcome(s) to be assessed
Digital portfolio (35%) Each student will develop an e-portfolio which comprises the reflections on each of the topics covered in the course, and reviews on examples of using technology as cognitive tools to improve student thinking and learning (Length: 1,500 – 2,500 words).	Outcomes 1, 2 and 3
Literature review (50%) A critical review of the research literature on technology as cognitive tools for student thinking and learning (Length: 3,000 – 4,000 words).	Outcomes 1, 2 and 3
Group presentation (15%) A group presentation on the use of technology to support student thinking and learning in a specific context or scenario.	Outcome 3

Minimum attendance requirement

Students should attend at least 6 sessions, in addition to the completion of online discussions and the participation in a group presentation at the end of the course.

Course pre-requisite

Nil

(Version of June 30, 2023)