

## **CHL5129: Introduction to Mixed Methods Research for Public Health**

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Sessions: Thursdays, 9:00am to 12:00pm

**Prerequisites:** This course is intended for students in the 2<sup>nd</sup> year of the Master's program or any year of the PhD program. Students must have, or be concurrently taking, a graduate level course in either quantitative methods (e.g., CHL5201 or equivalent) or qualitative methods (e.g., CHL5221, JRP1000 or equivalent). The course is designed for students who have a foundation in one strand of research (qualitative or quantitative), in order that they can focus their learning on developing a foundation in the other strand and understanding how the strands can be mixed. The course is not recommended for students who do not already have a foundation in either quantitative or qualitative methods.

### *Acknowledgment of Territory*

We would like to acknowledge the traditional territories of the Mississauga of the New Credit First Nation, Anishnawbe, Wendat, Huron, and Haudenosaunee Indigenous Peoples on which the Dalla Lana School of Public Health now stands. The territory was the subject of the Dish With One Spoon Wampum Belt Covenant, an agreement between the Iroquois Confederacy and Confederacy of the Ojibwe and allied nations to peaceably share and care for the resources around the Great Lakes. We would also like to pay our respects to all our ancestors and to our present Elders.

Research has been used as a colonial tool for oppression of Indigenous peoples, and used in ways that has harmed many other communities in Canada and around the world; therefore, our teaching of research methods in this course will centre a social-justice lens, and consider the ways in which mixed methods approaches to research can be used for social change.

### **Objective:**

The goal of this course is to introduce the use of mixed methods public health research. Mixed methods approaches are becoming increasingly common in research across areas of public health. However, most research methods courses focus on either qualitative or quantitative methods, and rarely address how to meaningfully integrate the two. In this course, students will explore the epistemological and methodological issues involved in conducting mixed methods research in public health. Students will acquire the skills to critique mixed-method research designs and will design their own mixed methods study in an area of public health of interest to them. Both students who are primarily trained in quantitative methods (e.g., epidemiology) and students primarily trained in qualitative methods (e.g., social sciences) will benefit from this course, and opportunities will be provided for students to learn from

one another's expertise. By the end of the course, students can expect to be able to a) identify whether a mixed methods design is appropriate for their research problem; and b) identify learning gaps to be addressed through future advanced qualitative, quantitative and/or mixed methods courses.

Topics to be covered include:

- Review of the key strengths and limitations of monomethod (qualitative and quantitative) designs
- Strengths and limitations of mixed methods approaches in public health research
- Theoretical and paradigm issues in mixed methods research
- Mixed methods research questions and study designs
- Mixed methods approaches to sampling, data collection and data analysis
- Quality appraisal in mixed methods research
- Writing and publishing mixed methods research

### **Evaluation:**

Grades for this course will be based on one primary assignment, which will be broken into its component parts.

Over the duration of the course, students will be required to develop a proposal for a mixed methods study on a public health topic of interest to them. As part of this, students will be required to: 1) write a short paper to present the proposed research question, explain why a mixed methods approach is appropriate to address it, and outline the relevant theoretical framework and/or hypotheses; 2) deliver an oral presentation to describe the research design, sampling strategy, and data collection and analysis plan for instructor and peer feedback; and 3) prepare the full proposal as a final written assignment in the format of a funding application.

Grades for the course will be determined as follows:

Research questions paper: 20%

Oral presentation: 30%

Final assignment (full proposal): 50%

Additional information about each assignment (including grading rubrics) will be posted on Quercus.

Points will be deducted for handing in assignments late, unless permission is obtained ahead of time (5% if turned in 1 day late; 10% 2 days late; 15% 3 days late and so on). Extensions will only be granted in circumstances that are unavoidable and unpredictable (e.g., illness, emergency). Late assignments will not be accepted after marked assignments have been returned.

### **Communication:**

You should feel free to contact either instructor with questions at any time. Email is the preferred method of contact for both of us, and we will respond within 2 business days. Please note that we will not normally be available to respond to emails during the weekend. We do not keep specific office hours each week, but are both happy to schedule face-to-face meetings for a mutually convenient time, as required.

### **Important University Policies and Resources:**

#### *Academic Integrity*

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences:

(<http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Polices/PDF/ppjun011995.pdf>)

University of Toronto's policy regarding plagiarism:

<http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>

Potential offences include, but are not limited to:

*In papers and assignments:*

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

**It is your responsibility to know what constitutes appropriate academic behaviour.** This includes understanding appropriate research and citation methods. If you are uncertain about this, please seek out additional information from the instructors or from other institutional resources. In particular, the following tip sheet provides clear and helpful information about appropriate academic citation:

<http://guides.library.utoronto.ca/citing>

#### *Support and Accommodation*

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs. For more information, or to register with Accessibility Services, please visit: <http://studentlife.utoronto.ca/as>

All required accommodations will be provided for students registered with Accessibility Services. Please speak to the instructors directly if there are other supports or accommodations that would enable you to do your best learning in this course.

**Schedule for 2018:**

Session/Date	Topic	Lead Instructor
1) Sept. 13	Introduction: What is mixed methods and why does it work? Examples from the field	Lori/Dionne
2) Sept. 20	Paradigm Issues in MMR	Lori
3) Sept. 27	Research questions, theories and hypotheses	Dionne
4) Oct. 4	Research designs - part 1 (Assignment 1 due)	Dionne/Lori
5) Oct. 11	Research designs - part 2	Lori (Guest lecture: Reza Yousefi Nooraie)
6) Oct. 18	Sampling, recruitment and sample size	Lori
7) Oct. 25	Data collection methods	Dionne
8) Nov. 1	Data analysis	Dionne
9) Nov. 8	Student presentations	
10) Nov. 15	Student presentations	
11) Nov. 22	Quality and rigour	Dionne
12) Nov. 29	Writing and publishing mixed methods research	Lori
13) Dec. 6	Final proposal due	

### **Readings:**

**Note: readings may change the week before lecture to reflect changes in the course.**

*Required Text:*

Creswell JW, Clark V. 2018. Designing and conducting mixed methods research (3rd ed.). Thousand Oaks: Sage.

*Other Recommended Readings:*

Creswell JW & Creswell JD. 2017. Research design: Qualitative, quantitative and mixed methods approaches (5<sup>th</sup> ed). Thousand Oaks: Sage. <https://us.sagepub.com/en-us/nam/research-design/book255675>

Teddlie C, Tashakkori A. 2009. Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioural sciences. Thousand Oaks: Sage. <http://www.sagepub.com/textbooks/Book226302>

DePoy E and Gitlin LN. (2016) Introduction to Research: Understanding and Applying Multiple Strategies. 5<sup>th</sup> Edition. Missouri: Elsevier. <https://www.elsevier.com/books/introduction-to-research/depoy/978-0-323-26171-5>

Weekly Readings: (subject to revision, based on student needs and interests. The final version of the reading list will be the one posted on Quercus the week prior to each course session)

#### **Week 1: Introduction**

Creswell & Plano Clark text, Chpt 1.

Mertens, DM (2015). Mixed methods and wicked problems. Journal of Mixed Methods Research, 9, 3-6.

#### **Week 2: Paradigm Issues in MMR**

*Required:*

Creswell & Plano Clark text, Chpt 2. *(see especially pages 26-27 on “Paradigm Debate Period” and 34-43 on “Philosophical Foundations”. This introduces the idea of paradigms, explains why paradigms are important in MMR, and describes and compares four common paradigms: postpositivist, constructivist, participatory, and pragmatist.)*

Bunniss, S., & Kelly, D. R. (2010). Research paradigms in medical education research. Medical Education, 44, 358-366. *(This paper compares the four paradigms most commonly used in health research. It is particularly helpful in illustrating the value of*

*interpretivist/constructivist approaches for the reader who is most familiar with the positivist orientation typical in health sciences).*

*Recommended:*

Shannon-Baker, P. (2015). Making paradigms meaningful in mixed methods research. Journal of Mixed Methods Research, DOI: 10.1177/1558689815575861 (*This article provides a fuller explanation of four paradigms commonly used in mixed methods research: pragmatism, transformative paradigm, dialectics, and critical realism.*)

Given, L.M. (2017). It's a new year...so let's stop the paradigm wars. International Journal of Qualitative Methods, 16, 102. (*This recent article discusses the current state of the 'paradigm wars', and implications for mixed methods.*)

### **Week 3: Research Questions, Theories and Hypotheses**

Thabane L, Thomas T, Ye C, Paul J. Posing the research question: not so simple. *Can J Anaesth*. 2009 Jan;56(1):71-9. doi: 10.1007/s12630-008-9007-4. Epub 2008 Dec 24. Review. PubMed PMID: 19247780.

Morgan DL. From themes to hypotheses: following up with quantitative methods. *Qual Health Res*. 2015 Jun;25(6):789-93. doi: 10.1177/1049732315580110. Epub 2015 Apr 9. PubMed PMID: 25857655.

Kelly M. The role of theory in qualitative health research. *Fam Pract*. 2010 Jun;27(3):285-90. doi: 10.1093/fampra/cmp077. Epub 2009 Oct 29. PubMed PMID: 19875746.

Teddle C, Tashakkori A. 2009. Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioural sciences. Chapter 6: Generating Questions in Mixed Methods Research. Thousand Oaks: Sage.

### **Week 4: Research Design Part 1**

Dew K. A health researcher's guide to qualitative methodologies. *Aust N Z J Public Health*. 2007 Oct;31(5):433-7. PubMed PMID: 17931290.

Goldberg RJ et al. Greater knowledge and appreciation of commonly used research study designs. *Am J Internal Med* 2013 Feb;126(2): 169e1-169e8.

Koretz RL. Considerations of study design. *Nutrition in Clinical Practice*. 2007 Dec;22: 593-598.

Noordjiz M et al. Study designs in clinical research. *Nephron Clin Pract*. 2009 113: c218-c221.

Starks H, Trinidad SB. Choose your method: a comparison of phenomenology, discourse analysis, and grounded theory. *Qual Health Res.* 2007 Dec;17(10):1372-80. PubMed PMID: 18000076.

*Recommended: (these are some key texts on some of the qualitative approaches we will be discussing. Let me know if you plan to you a different approach and would like more resources)*

Smith JA, Flowers P, Larkin M. Interpretative phenomenological analysis: Theory, method and research. 2009. Sage. *(reference text for phenomenology)*

Corbin J, Strauss A. Basics of qualitative research: Techniques and procedures for developing grounded theory. 2008. Sage. *(reference text for grounded theory)*

Shaw SE, Bailey J. Discourse analysis: What is it and why is it relevant to family practice? *Family Practice* 2009 Oct; 26(5): 413–419. *(introduction to discourse analysis)*

Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology* 2006 3(2):77-101 *(seminal paper on the thematic analysis)*

## **Week 5: Research Design Part 2**

Creswell & Plano Clark text, Chpt 3.

Creswell & Plano Clark text, Chpt 4,; Appendices A-G.

Fetters MD, Curry LA, Creswell JW. Achieving integration in mixed methods designs: Principles and practices. *Health Services Research.* 2013. 48(6): 2134-2156.

## **Week 6: Sampling, Recruitment and Sample Size**

Required:

-Marshall MN (1996) Sampling in qualitative research. *(This is a very quick and clear read explaining why the sampling approaches and sample sizes typical of quantitative research are not appropriate for qualitative research.)*

-Collins et al. (2007) A mixed methods investigation of mixed methods sampling designs in social and health sciences research. *(Please focus on pages 267-279, which outlines key issues related to sampling strategies and sample sizes for both qualitative and quantitative studies, and then integrates this information into a framework for mixed methods sampling designs. Feel free to also read the rest of the paper, which examines how common each of these sampling designs are in mixed methods research in the social and health sciences.)*

Recommended for those new to qualitative research:

-Patton, M. (1990) Designing qualitative studies: Purposeful sampling. *(This is a chapter from an older edition of a widely used qualitative methods textbook. It provides a very clear description of the various forms of purposeful sampling, and at the end, recommendations about sample size for qualitative research.)*

Recommended for those new to quantitative research:

-McCrum-Gardiner, E. (2010). Sample size and power calculations made simple. *(This is a very accessible read explaining the basis of sample size calculations for quantitative studies.)*

## **Week 7: Data Collection Methods**

### **Required:**

Creswell & Plano Clark text, Chpt 6.

DePoy E and Gitlin LN. (2016) Introduction to Research: Understanding and Applying Multiple Strategies. 5<sup>th</sup> Edition. Chapter 17: Collecting Data Through Measurement in Experimental-Type Research. Missouri: Elsevier.

DePoy E and Gitlin LN. (2016) Introduction to Research: Understanding and Applying Multiple Strategies. 5<sup>th</sup> Edition. Chapter 18: Gathering Information in Naturalistic Inquiry. Missouri: Elsevier.

Meadows KA. (2003) So you want to do research? 4: An introduction to quantitative methods. [Br J Community Nurs.](#) 2003 Nov;8(11):519-26.

Forman J et al. (2008). Qualitative research methods: Key features and insights gained from use in infection prevention research. *Am J Infect Control*, 36, 764-771.

### **Recommended:**

*Below are recommended readings for each of the data collection methods that are most commonly used in MMR. Please focus your time on methods of particular relevance to you.*

Qualitative Methods:

DiCicco-Bloom, B & Crabtree BF (2006). The qualitative research interview. *Medical Education*, 40, 314-321.

Keszei AP et al. (2010). Introduction to health measurement scales. *Journal of Psychosomatic Research*, 68, 319-323.

Turner, DW (2010). Qualitative interview design: A practical guide for novice researchers. *The Qualitative Report*, 15, 754-760. Morgan, DL (1997). *Focus groups as qualitative research (2<sup>nd</sup> Ed)*. Sage.

Kitzinger, J (1995). Introducing focus groups. *BMJ*, 311, 299-302.

Relevant to both interviewing and focus groups:

Access Alliance (2012). *Community-based Research Toolkit: Resources and tools for doing research with community for social change*.  
[http://accessalliance.ca/wpcontent/uploads/2015/03/CBR\\_Toolkit\\_Jan2012.pdf](http://accessalliance.ca/wpcontent/uploads/2015/03/CBR_Toolkit_Jan2012.pdf)  
 (see especially sections on creating interview/focus group questions, conducting the interview, the art of probing, and trouble shooting for interviews and focus groups)

Singer, M et al. (2000). The social geography of AIDS and hepatitis risk: Qualitative approaches for assessing local differences in sterile-syringe access among injection drug users. *Am J Pub Health*, 90, 1049-1056.

Arts-Based Methods:

Boydell KM, Gladstone BM, Volpe T, Allemang B, & Stasiulis E: **The production and dissemination of knowledge: A scoping review of arts-based health research**. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* 2012,13.

Catalani C, Minkler M. (2010). Photovoice: A review of the literature in health and public health. *Health Education & Behavior*, 37, 424-451.

Quantitative Methods:

Aday, Lu Ann & Cornelius, Llewellyn J. (2006). **Designing and Conducting Health Surveys; A Comprehensive Guide**, 3rd Edition. Jossey-Bass: A Wiley Imprint. San Francisco, CA.  
 Abramson JH, and Abramson ZH. **Research Methods in Community Medicine: Surveys, Epidemiological Research, Programme Evaluation, Clinical Trials**. John Willey & Sons; 6th Edition, 2008. Digital copy: <http://go.utlib.ca/cat/8051246>

Agrawal, V et al. (2009). Questionnaire survey of physicians: Design and practical use in nephrology. *Indian Journal of Nephrology*, 19, 41-47.

DeVellis, RF (1991). *Scale development: Theory and application*. Sage.

**Week 8: Data Analysis Methods**

Creswell, Chapter 7: "Analyzing and Interpreting Data in Mixed Methods Research"

DePoy E and Gitlin LN. (2016) Introduction to Research: Understanding and Applying Multiple Strategies. 5<sup>th</sup> Edition. Chapter 20: Statistical Analysis for Experimental-Type Designs. Missouri: Elsevier.

DePoy E and Gitlin LN. (2016) Introduction to Research: Understanding and Applying Multiple Strategies. 5<sup>th</sup> Edition. Chapter 21: Analysis in Naturalistic Inquiry. Missouri: Elsevier.

Östlund U, Kidd L, Wengström Y, Rowa-Dewar N. Combining qualitative and quantitative research within mixed method research designs: a methodological review. *Int J Nurs Stud.* 2011 Mar;48(3):369-83. doi: 10.1016/j.ijnurstu.2010.10.005. Epub 2010 Nov 16. Review. PubMed PMID: 21084086.

Michael D. Fetters, Leslie A. Curry, and John W. Creswell. (2013). Achieving Integration in Mixed Methods Designs—Principles and Practices. [Health Serv Res.](#) 2013 Dec;48(6 Pt 2):2134-56

#### Recommended:

Dierckx de Casterlé B, Gastmans C, Bryon E, Denier Y. QUAGOL: a guide for qualitative data analysis. *Int J Nurs Stud.* 2012 Mar;49(3):360-71. doi: 10.1016/j.ijnurstu.2011.09.012. Epub 2011 Oct 11. PubMed PMID: 21996649.

Gaddis ML, Gaddis GM. Introduction to biostatistics: Part 1, Basic concepts. *Ann Emerg Med.* 1990 Jan;19(1):86-9. PubMed PMID: 2297161.

Gaddis GM, Gaddis ML. Introduction to biostatistics: Part 2, Descriptive statistics. *Ann Emerg Med.* 1990 Mar;19(3):309-15. PubMed PMID: 2310070.

Gaddis GM, Gaddis ML. Introduction to biostatistics: Part 3, Sensitivity, specificity, predictive value, and hypothesis testing. *Ann Emerg Med.* 1990 May;19(5):591-7. PubMed PMID: 2331107.

Gaddis GM, Gaddis ML. Introduction to biostatistics: Part 4, statistical inference techniques in hypothesis testing. *Ann Emerg Med.* 1990 Jul;19(7):820-5. PubMed PMID: 2389867.

Gaddis GM, Gaddis ML. Introduction to biostatistics: Part 5, Statistical inference techniques for hypothesis testing with nonparametric data. *Ann Emerg Med.* 1990 Sep;19(9):1054-9. Review. Erratum in: *Ann Emerg Med* 1991 May;20(5):573. PubMed PMID: 2203291.

Gaddis ML, Gaddis GM. Introduction to biostatistics: Part 6, Correlation and regression. *Ann Emerg Med.* 1990 Dec;19(12):1462-8. PubMed PMID: 2240762.

### Week 11: Quality Appraisal

Vandenbroucke JP. STREGA, STROBE, STARD, SQUIRE, MOOSE, PRISMA, GNOSIS, TREND, ORION, COREQ, QUOROM, REMARK... and CONSORT: for whom does the guideline toll? *J Clin Epidemiol.* 2009 Jun;62(6):594-6. doi: 10.1016/j.jclinepi.2008.12.003. Epub 2009 Jan 31. PubMed PMID: 19181482.

Pluye P, Gagnon MP, Griffiths F, Johnson-Lafleur J. A scoring system for appraising mixed methods research, and concomitantly appraising qualitative, quantitative and mixed methods primary studies in Mixed Studies Reviews. *Int J Nurs Stud.* 2009 Apr;46(4):529-46. doi: 10.1016/j.ijnurstu.2009.01.009. Epub 2009 Feb 23. Review. PubMed PMID: 19233357.

Morse JM. Critical Analysis of Strategies for Determining Rigor in Qualitative Inquiry. *Qual Health Res.* 2015 Sep;25(9):1212-22. doi: 10.1177/1049732315588501. Epub 2015 Jul 16. PubMed PMID: 26184336.

Brown KM et al. Searching for rigor in the reporting of mixed methods population health research: A methodological review. *Health Education Research.* 2015 30(6): 811-839.

### Week 12: Writing and Publishing Mixed Methods Research

#### *Required*

-Stange KC, Crabtree BF, Miller WL. 2006. Publishing multimethod research. *Annals of Family Medicine*, 4(4), 292-294.

#### *Recommended*

-Creswell text, chapter 8

-Curry L & Nunez-Smith M (2015). Publishing mixed methods studies in the health sciences. In: *Mixed methods in health sciences research*. Sage. (For those interested in academic publishing: this very practical chapter provides suggestions for every stage of the process, from choosing your target journal through to responding to reviewer comments. Although it's specific to mixed methods, much of the material is applicable beyond that as well).

*Examples of our own published mixed methods studies, to give you an idea of what mixed methods might look like in your fields of study:*

-Ross LE et al. 2016. Bisexuality, poverty and mental health: A mixed methods analysis. *Social Science & Medicine*, 156, 64-72.

-Gesink D et al. 2016. Cancer screening barriers and facilitators for under and never screened populations: A mixed methods study. *Cancer Epidemiology*, 45, 126-134.