HPSC0126 Social Research Methods and Data Analysis in STS

Course Syllabus

2020-2021 session | Convenor: Dr Emily Dawson | e-mail emily.dawson@ucl.ac.uk

This course introduces students to the theory and practice of research methods in STS and social science more generally, comprising both qualitative and quantitative methods. It will cover research design; qualitative and quantitative methods; research management and ethics; and the epistemology of social research. The course is strongly recommended for any students wanting to undertake empirical social science research for their dissertation, and for students who want to familiarise themselves with how social scientists (particularly within STS) undertake research. In addition, for those wishing to apply for ESRC +3 PhD funding, it is designed to cover the core training requirements specified within Annex I of the *ESRC Postgraduate Training and Development Guidelines (2009)*.

Course Information

Basic course information

Course website:	See Moodle
Moodle Web site:	HPSC0126
Assessment:	See Moodle
Timetable:	See UCL on-line timetable
Prerequisites:	None
Required texts:	See Moodle
Course tutor(s):	Dr Emily Dawson, Rachael Jennings Charles, Charlotte Sleigh
Contact:	Emily.dawson@ucl.ac.uk
Web:	https://www.ucl.ac.uk/sts/people/dr-emily-dawson
Office location:	22 Gordon Square, Room 2.1
Office hours:	TBC – at the moment email Emily to arrange an appointment, if the UK lockdown changes or module support changes we might have a regular time slot again.

Schedule

UCL Week	Topic	Date
6	Introduction. What is Social Research: Decolonizing Methodologies in STS (including what is "metholodogy"!)	14/01
7	Unpacking a research paper (Aka: Preparing for your first assignment)	21/01
8	Methods: Documents	28/01
9	Methods: Surveys and Sampling *(Guest Lecture from Dr Amy Unsworth)*	04/02
10	Methods: Interviews and Focus Groups	11/02
11	**Reading Week**	18/02
12	Methods: Ethnography and Observation *(with Dr Noemi Tousignant)*	25/02
13	Methods: Visual Methods *(Guest Lecture from Dr. Jean Baptiste Gouyon)*	04/03
14	Methods: Case Studies	11/03
15	What is "analysis"?	18/03
16	Research Design	25/03

Assessments

Summary

	Description	Deadline	Word limit
Research Paper review	See below & on moodle	22nd Feb 2021, 5pm	1,000 words (20%)

Research Methods Essay	See Below & on Moodle	12th April 2021, 5pm	4000 words (80%)

Assignments

Assessment 1 (20%)

Drawing on the methodological lessons learned to date, take **one** of the papers below and write a review of the methods used, 1000 words limit. Things you might want to describe:

- What was the research setting out to do?
- What methods were used?
- Were they appropriate? Explain why you think that.
- What other methods could have been used? Explain why they might be better/worse.

1. Umoja Noble, S., (2013). Google Search: Hyper-visibility as a Means of Rendering Black Women and Girls Invisible. *InVisible Culture*(19).

2. Hamraie, A. (2018). Enlivened City: Inclusive design, biopolitics and the philosophy of liveability. *Built Environment, 44*(1), 77-104.

3. Epstein, S. (1997). Activism, Drug Regulation, and the Politics of Therapeutic Evaluation in the AIDS Era: A Case Study of ddC and the `Surrogate Markers' Debate. *Social Studies of Science, 27*(5), 691-726.

4. Dawson, E. (2018). Reimagining publics and (non)participation: Exploring exclusion from science communication through the experiences of low-income, minority ethnic groups. *Public Understanding of Science, 27*(7), 772-786.

5. Edmunds, D. S., Shelby, R., James, A., Steele, L., Baker, M., Perez, Y. V., & TallBear, K. (2013). Tribal Housing, Codesign, and Cultural Sovereignty. *Science, Technology, & Human Values, 38*(6), 801-828

6. Callon, M. (1984). Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay. *The Sociological Review, 32*(1_suppl), 196-233.

Assessment criteria (please also refer to those given in the Departmental Handbook)

1. Has the student identified the research question

2. Has the student identified the research methodology?
3. Has the student understood the pros and cons of different social research methods?
4. Has the student presented their assessment in a coherent and well argued way?

Assessment 2 (80%): Essay

Write an essay no longer than 4000 words that outlines how you would undertake research on one of the projects listed below and evaluates methodological alternatives for the research. For each project we have provided a link to more information about the research topics. The projects are all real & you are welcome to use information well beyond that on the linked project pages below in your assessment (i.e. science centre's individual websites, documents you might be able to download etc). But, you are *not allowed to generate or collect new data for this assessment!* So please stick to what's already available online.

The projects (choose one):

- Evaluate the Inspiring Science funding scheme, a Wellcome Trust/UKRI funded capital funding scheme for UK science centres: https://wellcome.org/what-we-do/directories/grants-awarded-inspiring-science-fund & https://www.gov.uk/government/news/uk-science-centres-to-receive-funding-boost-to-inspire-more-visitors-to-explore-and-discover-science.
- Explore cultures of science advice at DEFRA. https://www.gov.uk/government/publications/science-advisory-council-review-of-defras-expert-evidence-advisory-committee-structure
- Evaluate the impact of the Newton International Fellowships on global networks of science. https://royalsociety.org/~/media/grants/schemes/NIF-Scheme-Notes-2017.pdf

Please read the following instructions:
In the essay you should aim to use 3 methods and a mix of quantitative and qualitative approaches, however this can vary and the over-riding criteria for assessment here will be that you have fully justified your choice, recognising the strengths and limitations of your approach within the context of the research proposed.

The methods can be chosen from the range covered in the course or you may want to bring in other social science methods. All work should contain references to methods text books and other literature.

Your essay should be formatted to contain the following steps. USE SUBHEADINGS!
A. **Problem statement and background literature review**, e.g. for project 2, discussion of cultures of science advice at DEFRA reference research on science policy, the background to public understanding of science, etc ... with some coverage of the STS literature on it.

B. Formulate a set of possible ways to interrogate the problem, which should state specific **research questions** and, only if appropriate, a hypothesis.

C. Either pick one of the questions posed, or follow through several questions, for each question **outlining comparative methods**. Discuss what kind of evidence each approach would offer, e.g. which methods would (or would not) help you to evaluate a programme of grants? Ask what must be considered to operationalise these methods in the field. Be explicit about feasibility

and ethics. (Although we don't expect you to budget your analysis, as a 'rule of thumb' assume that your research project cannot extend beyond 4 years, and £600,000.00 of budget).

Discuss the drawbacks and advantages of each approach; you must articulate what criteria would be most relevant for such comparisons. Be careful not to simply list all the advantages/disadvantages of your chosen methods straight out of a methods textbook. This might be a starting point – but you need to link them to your proposed research & argue for them (eg. don't say one advantage of method X is that its inexpensive and leave it at that if your research is actually going to be costly).

D. **Conclude.** What is your best advice on how to approach the research problem, with feasibility, ethical and evidential robustness, this implies also clarity on what is the most interesting facet of the topic/problem.

Assessment criteria

1- The student follows the instructions
2- The student is able to structure the essay according to the steps laid out above and/or a standard research proposal format.
3- The student is able to formulate research questions.
4- The research proposed in the essay demonstrates a good understanding of the relationship between research question and methodological approach.
5- Each choice of research method is convincingly argued.
6- The document demonstrates engagement with the relevant literature and class materials.
7- The essay is written in a clear and accessible way.

Submitting Assessments:

You **MUST** submit your assessments using the submission points below.

- Check your work is referenced properly using Turnitin.
- Do not put your name anywhere on the work that you upload - **only use your UCL student number/candidate number.**
- Do not put your name in the filename of any work you upload (we see the filename!).
- Put the essay number or a brief essay title in the filename of what you upload.
- Get help using Turnitin:
  - check your work for plagiairism
  - submit your assessment
  - read your feedback.

Refer to the Module syllabus for the assessment schedule.

In order to be deemed 'complete' on this module students must attempt both the assignments.

Criteria for assessment

The departmental marking guidelines for individual items of assessment can be found in the STS Student Handbook. Further specific guidance is given on Moodle.

Aims & objectives

This course introduces students to the theory and practice of research methods in STS and social science more generally, comprising both qualitative and quantitative methods. It will

cover research design; qualitative and quantitative methods; research management and ethics; and the epistemology of social research. The course is strongly recommended for any students wanting to undertake empirical social science research for their dissertation, and for students who want to familiarise themselves with how social scientists (particularly within STS) undertake research. In addition, for those wishing to apply for ESRC +3 PhD funding, it is designed to cover the core training requirements specified within Annex I of the *ESRC Postgraduate Training and Development Guidelines (2009)*.

By the end of this course you will:

- Be introduced to a range of qualitative and quantitative social research methods used in STS and understand their strengths and weaknesses.
- Be introduced to underlying epistemological, ontological, ethical and axiological issues underpinning social research
- Know how to formulate research questions.
- Understand the relationship between research questions and methodological approach.
- Have engaged with the relevant academic literature on research methods.

Reading list

We have a weekly reading list for this module, but here are a few key texts you could usefully read all of (& they also appear on the week by week lists below). For instance, the Sage Handbook covers pretty much every method you can think of, as well as analytic techniques & theories of knowledge. Decolonizing methodologies presents a comprehensive view of all the aspects of carrying out research, but from a very clear stance about the power of research.

- Linda Tuhiwai Smith (2012). *Decolonizing methodologies: research and indigenous peoples* (Second Edition ed.). London: Zed Books. Introduction
- Norman. K. Denzin & Yvonne. S. Lincoln (Eds.)(2018), *The Sage handbook of qualitative research* (Fifth ed) Sage: London, Thousand Oaks & New Delhi
- Alan Bryman (2016 or 2012), Social Research Methods. Oxford: Oxford University Press.
- Matthew B. Miles, A.M. Huberman and Johnny Saldaña (2020). Qualitative data analysis: a methods sourcebook. 4th Edition. Sage: Los Angeles

Week 1: Introduction. What is Social Research: Decolonizing Methodologies in STS (including what is "metholodogy"!)

- Linda Tuhiwai Smith (2012). *Decolonizing methodologies: research and indigenous peoples* (Second Edition ed.). London: Zed Books. *Read the Introduction (pp. 1 – 19 and any of the rest of this amazing book that you'd like to read, the more the better!)*
- Yvonne S. Lincoln, Susan A. Lynam & Egon G. Guba (2018). Paradigmatic controversies, contradictions and emerging confluences, revisited. In N. K. Denzin & Y. S. Lincoln (Eds.), *The*

Sage handbook of qualitative research (Fifth ed., pp. 108-150). London and Thousand Oaks: Sage. *This can be a little tough going, give yourself plenty of time!*

- Dotson, K. (2015). Inheriting Patricia Hill Collins's Black Feminist epistemology. *Ethnic and Racial Studies, 38*(13), 2322-2328.

Week 2: Unpacking a research paper (Aka: Preparing for your first assignment)

- Emily Dawson, Louise Archer, Amy Seakins, Jennifer DeWitt, Spela Godec, Heather King, Ada Mau, Effrosyni Nomikou (2019). Selfies at a science museum: Exploring girls' identity performances in a science learning setting. *Gender and Education, 32*(5), 664-681. *I wrote this one & lead the qualitative ethnographic part of this project with the London schools for 5 years so you can ask me all about the background to the paper, which you can't easily do with other papers!*
- Inoka Amarasekara, I., & Will J. Grant (2019). Exploring the YouTube science communication gender gap: A sentiment analysis. Public Understanding of Science. *Public Understanding of Science, 28*(1), 68-84.

Week 3: Methods: Documents

- Alan Bryman (2016 or 2012), Social Research Methods. Oxford: Oxford University Press. *Read chapters 22 Language in qualitative research; 23 Documents as sources of data and 13 Content Analysis.*

<u>An example of STS research doing quantitative document analysis:</u>

- Sedona Chinn, Sol P. Hart, P. S., & Stuart Soroka (2020). Politicization and Polarization in Climate Change News Content, 1985-2017. *Science Communication, 42*(1), 112-129.

Week 4: Methods: Surveys and Sampling *(Guest Lecture from Dr Amy Unsworth)*

- Lesley Andres (2012). *Designing & doing survey research.* Sage: London, Thousand Oaks, New Delhi. *Read Chapter 2: Mapping out the survey research process. You can read more if you want to, this book is great because it spell out in detail each step of the survey research process.*
- David Gillborn (2010). The colour of numbers: surveys, statistics and deficit-thinking about race and class. *Journal of Education Policy, 25*(2), 253 - 276.

<u>An example of STS research using a quantitative survey approach:</u>

- Amy Unsworth & David Voas (2018). Attitudes to evolution among Christians, Muslims and the Non-Religious in Britain: Differential effects of religious and educational factors. *Public Understanding of Science, 27*(1), 76-93. *This paper is by our guest lecturer this week!*

Week 5: Methods: Interviews and Focus Groups

- Steiner Kvale (2008). *Doing Interviews.* Sage: Thousand Oaks & New Delhi. *Read chapter 5: Conducting an interview (pp. 52 – 66) & try to skim Chapter 9 : Analysing interviews, as well as any other bits of this fantastic book that you can.*

An example of STS research using interviews:

- Daniel L. Kleinman, & Sainath Suryanarayanan (2012). Dying Bees and the Social Production of Ignorance. *Science, Technology & Human Values. 38*(4): 492-517.

An example of STS research using focus groups:

- Simon J. Lock, Melanie Smallman, Maria Lee & Yvonne Rydin (2014). "Nuclear energy sounded wonderful 40 years ago": UK citizen views on CCS. *Energy Policy*, *66*, 428–435.

Week 6: Methods: Ethnography and Observation *(with Dr Noemi Tousignant)*

- John. D. Brewer. *Ethnography.* Open University press: Buckingham & Philadelphia. *Read Chapter 3: The research process in ethnography. Pp. 56 – 103 (& as much of the rest of the book as you need to!)*
- Annette N. Markham (2018). Ethnography in the digital internet era: from fields to flows, descriptions to interventions. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (Fifth ed., pp. 650-688). London and Thousand Oaks: Sage.

Three examples of STS research using ethnographic approaches!

- Noemi Tousignant (2013). Broken tempos: Of means and memory in a Senegalese university laboratory. *Social Studies of Science, 43*(5), 729-753. *This paper is written by our guest lecturer for this week, so well worth a read!*
- Rosemary McKechnie (1996). Insiders and outsiders: identifying experts on home ground. In A. Irwin & B. Wynne (Eds.), *Misunderstanding Science? The public reconstruction of science and technology* (pp. 126-151). Cambridge: Cambridge University Press. *This remains, after 100 years, my favourite STS paper ☺*
- Bruno Latour & Steve Woolgar (1986). Laboratory life: The construction of scientific facts. Princeton University Press. *Read Chapter 2: An anthropologist visits the laboratory, and you can read the whole of this book if this kind of STS lab studies takes your fancy, though I have to admit I found it hard to download.*

Week 7: Methods: Visual Methods (Guest Lecture from Dr. Jean Baptiste Gouyon)

- Rose, Gillian. *Visual methodologies: An introduction to researching with visual materials* (4th edition). Sage, 2016. Chapter 1 & 2 (pp.1-47)
- Bauer, Martin. W. & Gaskell, George. *Qualitative researching with text, image and sound*. London: SAGE Publications Ltd. *Read Chapter 6 (pp. 94-107), then skim Chapter 13 (pp. 228-245) & Chapter 14 (pp. 247-262). [NB: the 2nd two chapters on this list focus on analysis, so worth a skim now then come back to them in week 9 if you're interested in this kind of research!]*

An example of STS research using visual methods:

- Jean-Baptiste Gouyon, (2014). Making science at home: visual displays of space science and nuclear physics at the Science Museum and on television in postwar Britain. *History and Technology, 30*(1-2), 37-60. *This paper is by our guest lecturer for this week!*

Week 8: Methods: Case Studies

- Robert Yin (2018). Case study research and applications: Design and methods. Sage: Thousand Oaks, London and New Delihi. *Read Chapter 1: Getting started: how to know whether and how to use the case study as a research method, Chapter 4: Collecting Case Study evidence*
- Thomas Schwandt and Emily F. Gates (2018).Case study methodlogy. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (Fifth ed., pp. 341-553). London and Thousand Oaks: Sage.

An example of STS research using a case study approach:

- Carina Llosa (2019). Socio-environmental conflicts as social cohesion thermometers: a case study. *Tapuya: Latin American Science, Technology and Society, 2*(1), 237-252.

Week 9: What is "analysis"?

- Matthew B. Miles, A.M. Huberman and Johnny Saldaña (2020). Qualitative data analysis: a methods sourcebook. 4th Edition. Sage: Los Angeles. *Read Chapter 4: Fundamentals of Qualitative Data Analysis and Chapter 11: Drawing and verifying conclusions.*
- **Note:** the many books already on this reading list have chapters on analysis, so read them too. So, for example, if you are thinking about case studies, go and read about analysis in Robert Yin's book about case studies, or if you are thinking about visual research, go & read about analysis in Martin Bauer & George Gaskill's book, or if you are thinking about interview research, read Steiner Kvale's book, etc ☺

Week 10: Research Design

- Linda Tuhiwai Smith (2012). *Decolonizing methodologies: research and indigenous peoples* (Second Edition ed.). London: Zed Books. *Read Chapter 5: Notes from down under & Chapter 8: Twenty-five indigenous projects. Compare the section in Chapter 5 called "Twelve ways to be researched" to the twenty-five projects described in Chapter 8. Think about how these apply to the papers in your formative assessment for this module. What might these perspectives offer to think about Kim TallBear's STS work on genomics? What might these perspectives offer to think about Aimie Hamraie's work on STS infrastructure studies? Now that you are in week 10, what do you think about the ideas of methods & methodologies we discussed in week 1?*
- Matthew B. Miles, A.M. Huberman and Johnny Saldaña (2020). Qualitative data analysis: a methods sourcebook. 4th Edition. Sage: Los Angeles. *Read Chapter 2: Research Design & Data Management.*

See individual sessions on Moodle for further reading.

Course expectations

Students are required to attend at least 70% of classes and to participate in discussions.

Important policy information

Details of college and departmental policies relating to modules and assessments can be found in the STS Student Handbook www.ucl.ac.uk/sts/handbook

All students taking modules in the STS department are expected to read these policies.