

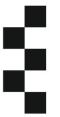


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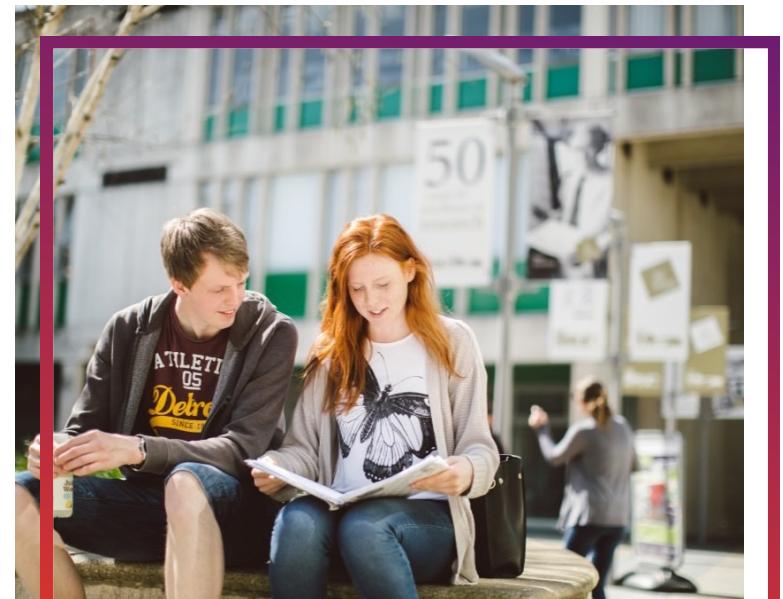
Research Methods and Professional Practice – June 2022

Seminar 2



Agenda

- A quick recap of the last weeks
- Unit 3 and 4
- Seminar activity
- Unit 4 submission (formative assessment)
- Next Steps





Tutor Contact

- * Email: anytime
- * Office Hours: Mondays 5pm – 6pm (17.00-18.00hrs BTS) – in my Zoom lounge

>> Outside of this slot it is by appointment

Unit	Seminar Title	Date and Time
1.	Seminar 1 - Introduction	Wednesday 15th June 2022 at 2pm (14:00 BST)
3.	<u>Seminar 2 - Peer review Activity</u>	Wednesday 29th June 2022 at 2pm (14:00 BST)
4.	<u>Seminar 3 - Case Study: Privacy</u>	Tuesday 12th July 2022 at 2pm (14:00 BST)
8.	<u>Seminar 4 - Inferential Statistics Workshop</u>	Wednesday 3rd August 2022 at 2pm (14:00 BST)
9.	<u>Seminar 5 - Workshop on Presenting Results</u>	Wednesday 10th August 2022 at 2pm (14:00 BST)
11.	<u>Seminar 6 - e-Portfolio Preparation</u>	Friday 26th August 2022 at 5pm (17:00 BST)



Module Structure

Link to the calendar:

<https://www.my-course.co.uk/course/view.php?id=8475§ion=2>

<u>Literature Review</u>	- Critically evaluate existing literature, research design and methodology for a chosen topic and so produce a literature review on this topic. - 2000 words	Weighting 30%
<u>Research Proposal Presentation</u>	Presentation: about 15 minutes, you can work against a minimum of 1500 to a maximum of 2250 words in your oral presentation /transcript.	30%
<u>Individual e-Portfolio</u>	The strict word count limit for the e-portfolio applies to the reflection only - 1,000 words	40%

Unit	Component	Deadline
7	<u>Literature Review</u>	23:55 hrs Monday 1st August 2022
10	<u>Research Proposal Presentation</u>	23:55 hrs Monday 22nd August 2022
12	<u>Individual Module e-Portfolio</u>	23:55 hrs Monday 5th September 2022



Assessment – Formative

Formative and e-Portfolio Activities

To aid your development of an in-depth understanding of the syllabus, regular formative assessment is provided via case studies, exercises, and reflective commentaries. Furthermore, the formative feedback received will enable you to develop your understanding of what is required for the summative assessments. Although not all of these activities are weighted components that count towards your module grade, they are designed to help you gain a deep understanding of the module content and provide a foundation for understanding.

We recommend that you participate in all formative activities and make frequent entries to your **e-portfolio which is assessed in this module**.

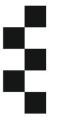
You will find the main e-portfolio and formative activities below. Please make sure that you read the guidance in each unit to fully understand weekly study requirements. Also read the full e-Portfolio guidance for the final submission in unit 12.

Unit(s)	Component	Deadline	e-Portfolio/Formative
1 - 3	Collaborative discussion 1	End of unit 3	e-Portfolio
1	Reasoning Quiz	End of unit 1	Formative
1	Reflective Activity 1	End of unit 1	e-Portfolio/Formative
4	e-Portfolio Activity: Literature Review Outline	End of unit 4	e-Portfolio/Formative
6	Wiki Activity	End of unit 6	Formative
6	e-Portfolio Update	End of unit 6	e-Portfolio/Formative
7 - 9	Collaborative discussion 2	End of unit 9	e-Portfolio
8	e-Portfolio Activity: Research Proposal Outline	End of unit 8	e-Portfolio/Formative
8 - 9	Statistical Worksheet Submissions	End of unit 10	e-Portfolio
12	Self Test Quiz	End of unit 12	Formative



Research Methods and Professional Practice – Recap U 1-7

Syllabus Items	Units	Activities
1. Scientific Investigation and Ethics	1	Discussion forum, Reasoning Quiz, Reflective activity - Ethics in ComputingPage
2. Research Questions, the Literature Review and the Research Proposal	2	Discussion forum, Literature Review Guide Questions.
3. Research Methods	3	e-Portfolio Learning Activity
4. Case Studies, Focus Groups and Observations	4	Submit a brief outline of your literature review for formative feedback to aid in Unit7 submission.
5. Interviews and Survey Methods	5	Reflective Activity2
6. Questionnaire Design	6	e-Portfolio update: Data Collection Wiki Activity: Questionnaires
7. Validity and Generalisability in Research	7	Collaborative Discussion 2, e-Portfolio update: Data Collection, Submit a brief outline of your research proposal, Hypothesis Testing worksheet. Literature Review Assignment



Research Methods and Professional Practice - Recap U 8-12

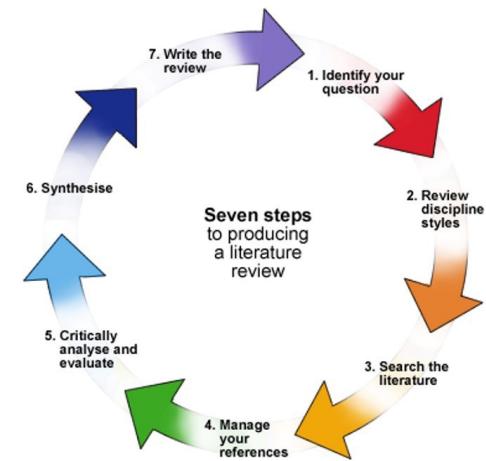
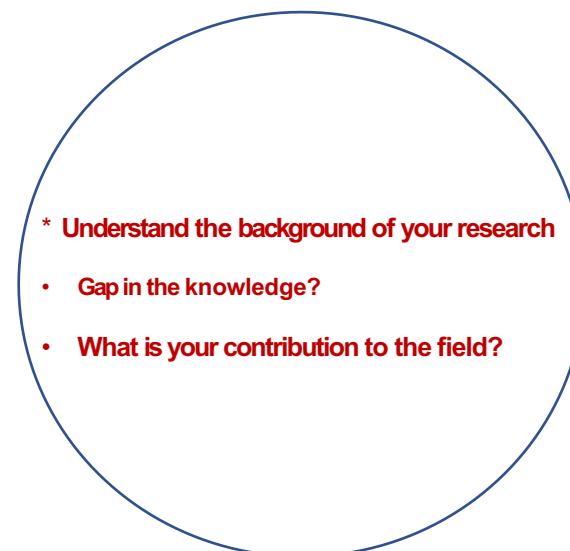
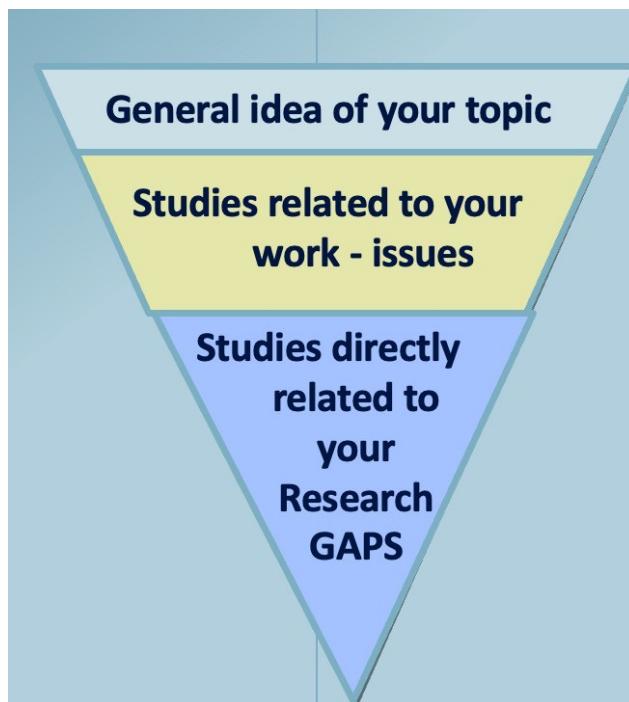
8. Inferential Statistics	8	Hypothesis Testing worksheet, submit a brief outline of your Research Proposal , Exercises
9. Analysing Qualitative Data	9	Discussion forum, Charts Worksheet and Analysis,
10. Research Writing	10	Submit your statistical worksheets Research Proposal Presentation
11. Professional Development – Your e-Portfolio.	11	e-Portfolio Preparation,
12. Project Management and Managing Risk	12	Self Test Quiz, End of Module Assignment - Individual e-Portfolio



Research Methods and Professional Practice – more about LR

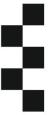
Structure of the Literature Review

Think of it like an inverted triangle



***Find the right sources!**

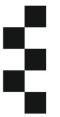
>> Keywords



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A few final words of advice about actually writing your LR

- Locate your most important sources
- Analyse them and organise them before you begin writing
- Note key statistics / quotes / main concepts
- Reorganize your notes according to the path of your research outline
- Synthesise and plan: flesh out your item list with details from your critical evaluation of the literature
- Using the plans from the synthesis of the reading of literature to create an outline of your literature review
- When you write the LR, **focus on ideas** and use examples from your notes
- Only cite the **best** and most **relevant research**, rather than going for sheer quantity
- If it's long, provide an overview near the beginning of the review [tables]
- State explicitly what will and will not be covered
- Write a conclusion for the end of the review



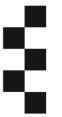
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Remember: A literature review is not a series of annotated articles!

Your research questions are your guides.

Always aim for a clear and cohesive essay that integrates the key details of the literature and show in which way your research helps address those research questions.

In **Week 4** you have the submission of your LR outline for **formative assessment** >> to get feedback for **actual submission** in **Week 7**



Research Methods and Professional Practice -U 3 Research Methods

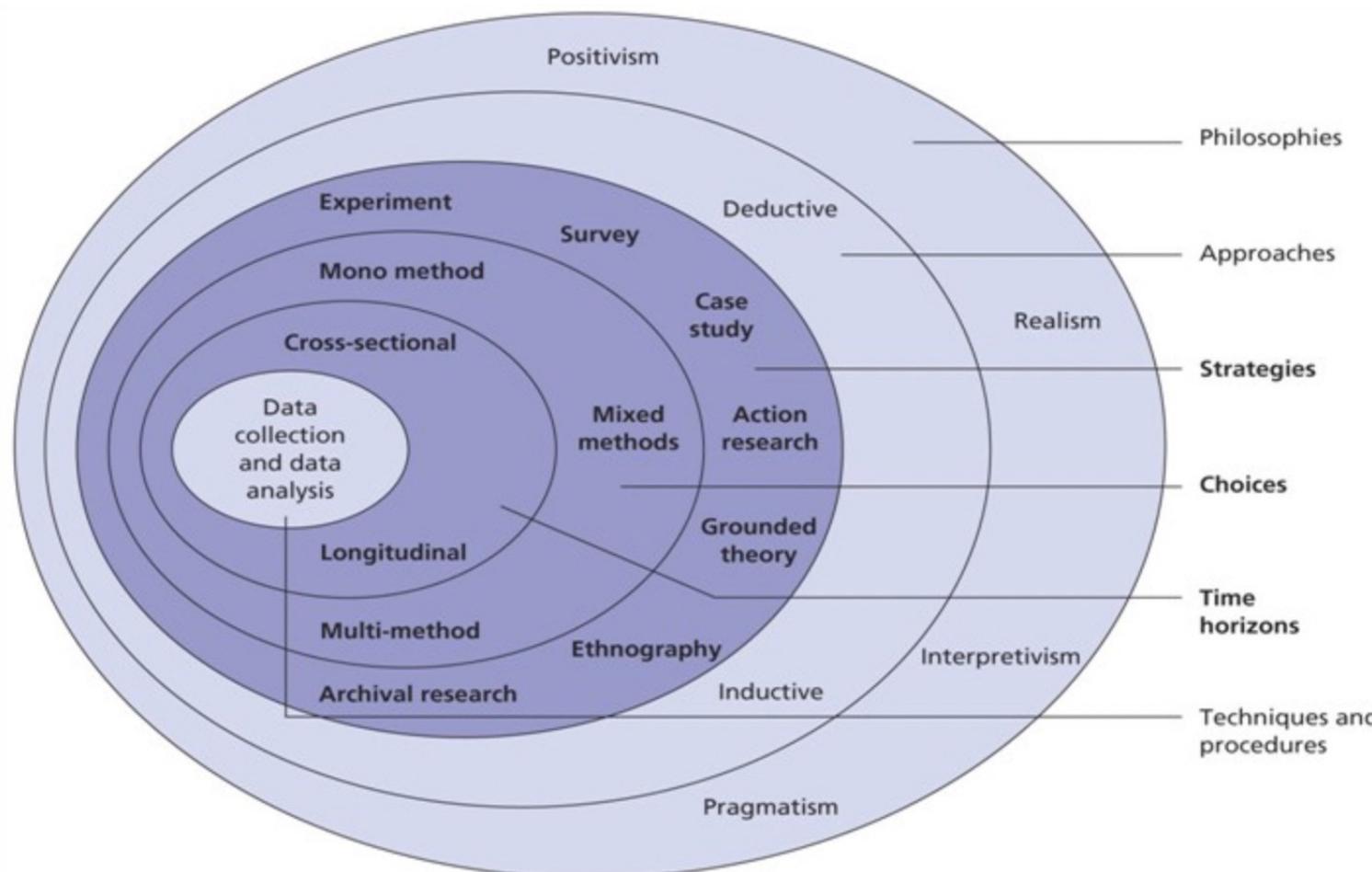
Unit 3: Research Design

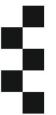
Research process:

- Identify the broad area of study.
- Select a research topic.
- **Decide on an approach.**
- **Plan how you will perform the research.**
- Gather data and information.
- Analyse and interpret these data.
- Present the results and findings.



Research Methods and Professional Practice





Research Methods and Professional Practice

Before going into the research methods, it is beneficial to understand **Research Design**. Research design refers to having a plan about what you plan to do in order to answer your research question (Saunders et al., 2012). Hence, you will need to be sure of the research strategies and methods you will employ for data collection and your analysis.

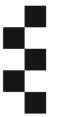
The 2 types of research design are:

Exploratory Research: where, as the name suggests, specific aspects of a research area are explored. The problem is not clearly defined, so there cannot be a conclusive result from the research. Instead, there will be a better understanding of the problem or situation. An example of Exploratory Research is where a company wants to carry out an investigation into the effectiveness of Customer Relationship Management in mobile marketing.

Conclusive Research: being the opposite of exploratory research, the focus is more specific – to verify insights and aid in selecting a course of action (BRM, n.d.). One key category of this type of research design is **Descriptive Research**, where the aim is to describe elements or causes in the specified research area. An example of Descriptive Research is a focus on social media where you undertake a critical analysis of this tool as a marketing strategy.

Research Methods actually refers to the “systematic tools used to find, collect, analyse and interpret information” (Sage, 2021). So, understanding which research method to adopt for your project is essential as it will determine the type of data you collect and analyse, in order to answer your research question. The three main types of Research methods are Qualitative, Quantitative and Mixed Methods Research.

Quantitative vs Qualitative is probably the most important difference you will need to understand when doing research

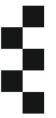


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*'Qualitative research is **multimethod in focus**, involving an **interpretative, naturalistic approach to its subject matter**. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them' (Denzin and Lincoln 2005:2).*

The following definition, taken from Aliaga and Gunderson (2000), describes what we mean by quantitative research methods very well:

Quantitative research is 'Explaining phenomena by collecting numerical data that are analysed using mathematically based methods (in particular statistics)'.



Research Methods and Professional Practice

Qualitative Research: refers to a research method used to gather data about experiences, behaviours and emotions from a predetermined set of respondents. This type of research is useful in exploring how or why something has occurred and interpreting the events and outcomes. Inductive approaches are associated with qualitative research.

The tools and techniques used to gather qualitative research data are:

- Focus groups (Covered in unit 7).
- Case studies (Covered in unit 7).
- Observations (Covered in unit 7).
- Surveys/polls (Covered in unit 8).
- Interviews (Covered in unit 8).

Quantitative Research: refers to a research method used to gather numerical data to which statistical analysis can be applied. It focuses on discovering patterns and/or relationships and can therefore be used to make generalisations. So, the main questions being explored using this method are "how much?", "how many?" and "to what extent?". Deductive approaches are associated with quantitative research.

The tools and techniques used to gather quantitative research data are:

- Experiments (including Observations).
- Case studies.
- Surveys/polls.

• **Action research**

'the carefully documented (and monitored) study of an attempt by you to actively solve a problem and/or change a situation' (Herbert, 1990: 29).

• **Experiment**

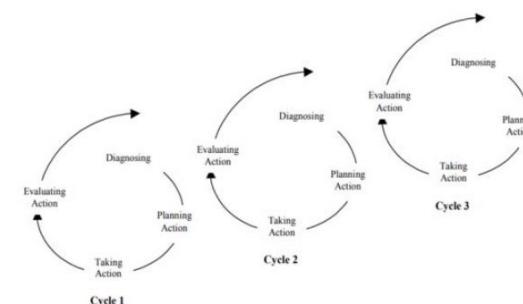
'Involves an investigation of causal relationships using tests controlled by yourself'.

• **Case study**

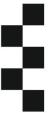
A case study is 'an in-depth exploration of one situation' (Cornford and Smithson, 2006: 71)

• **Survey**

It allows 'the collection of a standardised data from a sizable population in a highly economical way' (Saunders *et al.*, 2012: 177).



Spiral of Action Research Cycles



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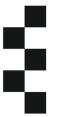
Peer Review Activity

At least ***Two papers*** in a Computing field of your choice that utilise the ***two different types of research methods*** to achieve their goal/research aims.

Familiarise yourself with the purpose, problem, objective or research question of each paper.

- Are they in line with your experience or thoughts on the topic, contributing to the collective body of knowledge in this area?
- Is the research methodology utilised in each paper appropriate for the stated purpose or question?
- In terms of data collection and analysis, is this also appropriate for the stated purpose or question? (We will discuss this further in upcoming units.)
- Does each paper support its claims and conclusions with explicit arguments or evidence?
- How would you enhance the work/paper?

Remember to record your answers and feedback in your e-Portfolio.



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Qualitative Research Methods

Unit 4: Case Studies, Focus Groups and Observations

- Data collection methods
 - **Case studies** involve in-depth research and study of **individuals** or **groups**.
 - **A focus group** is also one of the commonly used qualitative research methods used in data collection.
 - **Quantitative observation** refers observing numerical values.
 - **Qualitative observation** refers to the monitoring of characteristics.
- Readings
 - Fuelcycle (2019) *The Three Most Common Observation Research Methods*.



Research Methods and Professional Practice - Unit 3

Formative Activities | 12 hrs

Continue with the [Unit 1 Discussion forum](#). You should now provide a summary post into to the discussion in Unit 1 based on your initial post, the feedback from your peers and the content of all 3 units so far. Please try to limit your posts to 200-300 words maximum. Your follow-up responses should be labelled as 'Summary Post'. These posts should be included in your e-Portfolio.

Participate in the seminar this week.

Complete the e-Portfolio Activity below.

Prepare for next week's seminar session by attempting the Seminar 3 preparation questions available in Unit 4.

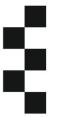


e-Portfolio Activity: Research Proposal Review

Unit 3: e-Portfolio Activity: Research Proposal

Considering your thoughts on your chosen area of interest for your project:

- Which of the methods described in week 3's reading would you think would suit your purpose?
- Which data collection methods would you consider using?
- You could be using a mixture of both the research methods and the data collection methods.



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Week 4 submission (formative assessment)

Literature review

- **Submit** a brief outline of your literature review this week
 - To provide an overview of current knowledge on the chosen topic.
 - To demonstrate an awareness of relevant, current literature.
 - To highlight similar and contrasting views on your chosen topic.
 - To showcase your research and writing skills.
- **Learning Outcomes**
 - Appraise the principles of academic investigation, applying them to a research topic in the applicable computing field.
 - Evaluate critically existing literature, research design and methodology for the chosen topic, including data analysis processes.



Research Methods and Professional Practice – U1-3 Discussion Forum

And don't forget our Discussion Forum – it will last for 3 weeks covering units 1, 2 and 3.

- Guidelines for Formative Discussion Responses
 - Follow good netiquette in your discussions
 - Post around **6-10 times** over the three-week period.
 - Use the UoE OHarvard reference style.
- Grading: the collaborative discussion will not be assessed, BUT is a component of your e-portfolio which you will submit in unit 12 for summative feedback.



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Questions?

