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Cambridge International **A Level**

Cambridge A Level Global Perspectives & Research

A Learner's Guide to the Cambridge Research Report

Syllabus 9239

Interactive

Contents

GLOBAL PERSPECTIVES

About this Guide

This is a guide aimed to help you to understand more about what you need to do successfully to complete a 'Cambridge Research Report'. Over the following pages we will look at the syllabus and what it demands of you, and we will start to examine the methods and critical thinking skills that you will need to call upon to complete your research report.

The Cambridge Research Report presents a unique and exciting opportunity for you to research and write about a topic entirely of your own choosing. Most of your work up to now has probably been guided by what your teachers want you to write about or what the curriculum dictates. Look at this as your opportunity to break free.

This guide recognises that, for many, the prospect of conducting independent research by yourself is a daunting one. Many learners find the experience of being independent researchers stressful and can worry about the seemingly technical requirements of doing research rigorously.

But, as Albert Einstein once wrote,

'If we knew what it was we were doing, it would not be called research, would it?'

If you read this guide carefully and keep it with you as a reference resource it will help you better understand what is required of you to complete the report successfully. This guide will look closely at the skills you will need to demonstrate as you go about researching and writing up your report, and will examine what the key objectives that you will be assessed against mean in the context of doing a Cambridge Research Report.

About this Guide
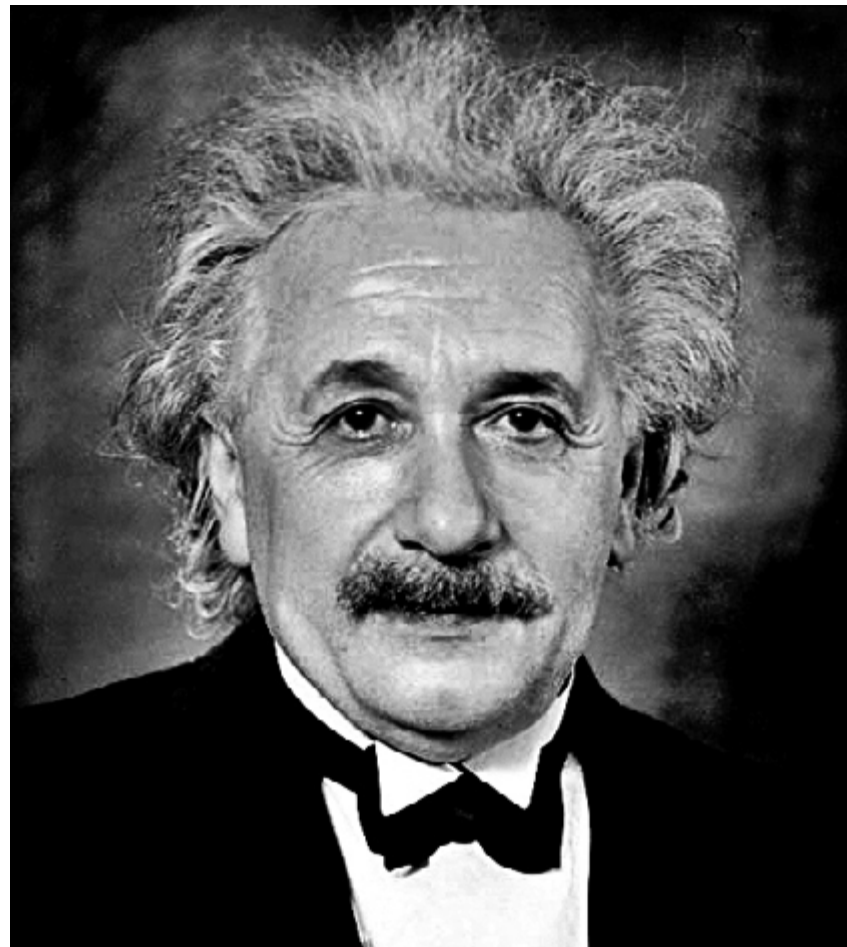
It is advisable that you **read this entire guide** before you start the first stage of thinking about what will be your research topic. Many of the concepts and techniques introduced later in the guide are relevant to even the first stages of planning a research report of your own.

> For instance, when you start to think about a research topic and a research question it is good to anticipate what kind of 'research design' you will need to use to answer that question. If you start by posing a question that demands that you use methods that you are not comfortable with using then already it's not the right question for you.

Don't worry if your research doesn't give you the answer straight away, that actually directly reflects what research is. Similarly, you will find that even though reading the main publications on your topic is widely seen as something you do at the start of your project, you will actually find that you will continue the process of discovering and reading important publications right up to the end of your project. That's simply what research is like.

The research design process: In this guide we have divided your research into its main 'stages', and we treat those stages as different parts of a 'research design'.

This guide takes the concept of a research design and its main stages and uses that to structure each section in a logical sense. You can do the same when reflecting on your own research journey in your report, but your teacher may recommend other ways

The core elements – or stages - of research design can be summarised as follows:

1. Selecting your topic
2. Developing your research question
3. Dealing with practical and personal considerations
4. Desk research: Identifying, searching and reviewing the literature
5. Selecting your methods
6. Gathering primary data (aka 'fieldwork')
7. Analysing your findings
8. Writing up your report.

About this Guide

What is the Cambridge Research Report?

The Cambridge Research Report is a piece of independent research, on the topic of your choice.

To complete the report you will need to:

* pose a researchable research question,
* gather relevant data and information and
* write it up in a 5,000 word research report.

The Cambridge Research Report constitutes the A Level component of the Cambridge International A Level Global Perspectives & Research qualification.

The Research Report contributes 50% of your final A Level grade.

Alongside your completed research report you will also need to submit an accompanying **Research Log and complete a 10 minute interview or viva with your teacher**. We will tell you more about this later in this guide.

Skills based: The Cambridge A Level Global Perspectives & Research is designed to be a skills-based course, and the report is where the examiner gets to see the skills you have acquired. Your report is designed to give you the opportunity to apply the skills of the 'Critical Path' that you developed in the AS section of the course.

Figure 1 *The critical path*

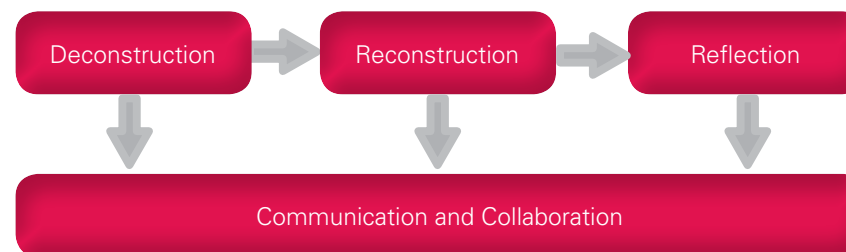The AS course will have encouraged you to think critically and to analyse and evaluate arguments and perspectives. You will have developed the ability to deconstruct and reconstruct arguments about global issues through personal research and through the interrogation of evidence. You will have reflected on the implications of your research and this will have led you to make personal judgements.

About this Guide

What is the Cambridge Research Report? *continued*

What is required of you: the Research Report

Topic selection:

The first thing you need to do is choose a topic that interests you. It is up to you for your research report. It is not up to your teacher or Cambridge to select a topic for you (although of course your teacher can help you make a decision).

Word length:

The report must not exceed 5,000 words, excluding only the bibliography. A word count must be declared. Any work beyond 5 000 words will not be marked and will not be included in the assessment.

Bibliography:

The report must include a bibliography and full bibliographical references must be given for any quotations. The production of a bibliography is a compulsory requirement.

Referencing and citations:

The precise format and referencing conventions used should be appropriate to the subject discipline/s that you have opted to research. Any recognised and consistently applied bibliographical system is acceptable and you should investigate which is most appropriate for the kinds of sources and arguments you are using in your report. This is an important part of the research process and excellent preparation for university. For example, Harvard referencing is more usual in the sciences and social sciences, whereas a footnoted style such as the Oxford or Chicago systems may be more useful for literary or historical reports.

Complete an Outline Proposal Form (OPF):

You will also need to submit an 'outline proposal form' before starting the main body of your research and writing on the report. Your teacher will email this to Cambridge.

This form will include:

- the title or aim of the piece of work
- the proposed methods to be used to collect and analyse information and data and, where possible and appropriate, a brief list of sources.

About this Guide

What skills will be assessed?

We've noted already that this is a skills-based course, and so it's important to be aware of the skills you will need to demonstrate in your research report. These skills fall into two categories, methodological skills and critical thinking skills.

Methodological skills comprise the attributes you will need to design and carry out a research project. Such skills include the ability to select the best methods to use to answer a question, the ability to devise a research question and the ability to make sense of your findings and write them up in a way that answers your question.

Critical thinking skills include the ability to detect bias, evaluate different arguments and types of evidence together with the ability to reflect on your own learning and argue different perspectives.

The syllabus states that you will be assessed on your ability to:

- devise and develop an appropriate research question
- design and manage your own research project using appropriate research methods and methodology

- maintain and use a research log in support of the research process
- select and analyse appropriate concepts, arguments, perspectives and evidence from a range of source material
- analyse and use relevant and credible evidence in support of arguments and overall perspectives
- analyse relevant perspectives, showing awareness of how the arguments, claims and the nature of the evidence are used to support conclusions
- evaluate specific research methods and methodology
- evaluate and synthesise evidence to draw reasoned conclusions
- evaluate and synthesise alternative perspectives and interpretations in order to make your own reasoned personal judgments
- reflect on the scope, nature and limitations of your own research report, and how and why your own personal viewpoints of the issue/s researched may have changed during the research process
- communicate clearly throughout the report using appropriate academic terms, referencing and citation techniques
- provide an oral explanation and justification of your own report findings, choice and use of research methods and methodology.

Your Cambridge Research Report should not merely be a collection of information which anyone might have been able to put together, nor is it simply an opinion based on argument; it is the result of a careful evaluation of all sorts of evidence – it is your own unique, informed and educated *interpretation* of a topic and a question. You will have to take into account the origins, the value and the reliability of the evidence you use; to weigh up the different perspectives and to reflect on and scrutinise your own conclusions and their implications.

In addition, you need **practical skills** and **logistical skills** to plan and conduct a research project from start to finish. You will need to manage your time effectively to meet deadlines, critically evaluate the resources at your disposal and you will need to structure and plan your work alongside all of the other things you have to do in the coming months. You will also need to keep yourself motivated and interested in the project throughout.

About this Guide

Key objectives

In addition to demonstrating your critical thinking, methodological and logistical skills, readers of your report (which is to say your examiners and your teachers) will be looking for evidence in your report that that you have taken on board the key concepts that have informed the course as a whole.

The syllabus aims to encourage learners to develop by:

- providing opportunities to acquire disciplined and scholarly research skills
- promoting a critical, questioning approach to information using the language of reasoning
- prompting self-reflection and independence of thought
- creating opportunities to understand and engage with key global issues wherever they live and work
- nurturing an awareness and understanding of, and respect for, the diversity of perspectives on global issues
- offering an interdisciplinary approach to global issues
- encouraging development of independent learning skills in preparation for study in higher education and lifelong learning
- promoting an understanding of appropriate research skills
- engaging in the research process on an academic topic of their own choice which reflects their interest
- providing opportunities for the exercise of the higher-order thinking skills of analysis, synthesis and evaluation
- providing opportunities to develop oral presentation and communication skills.

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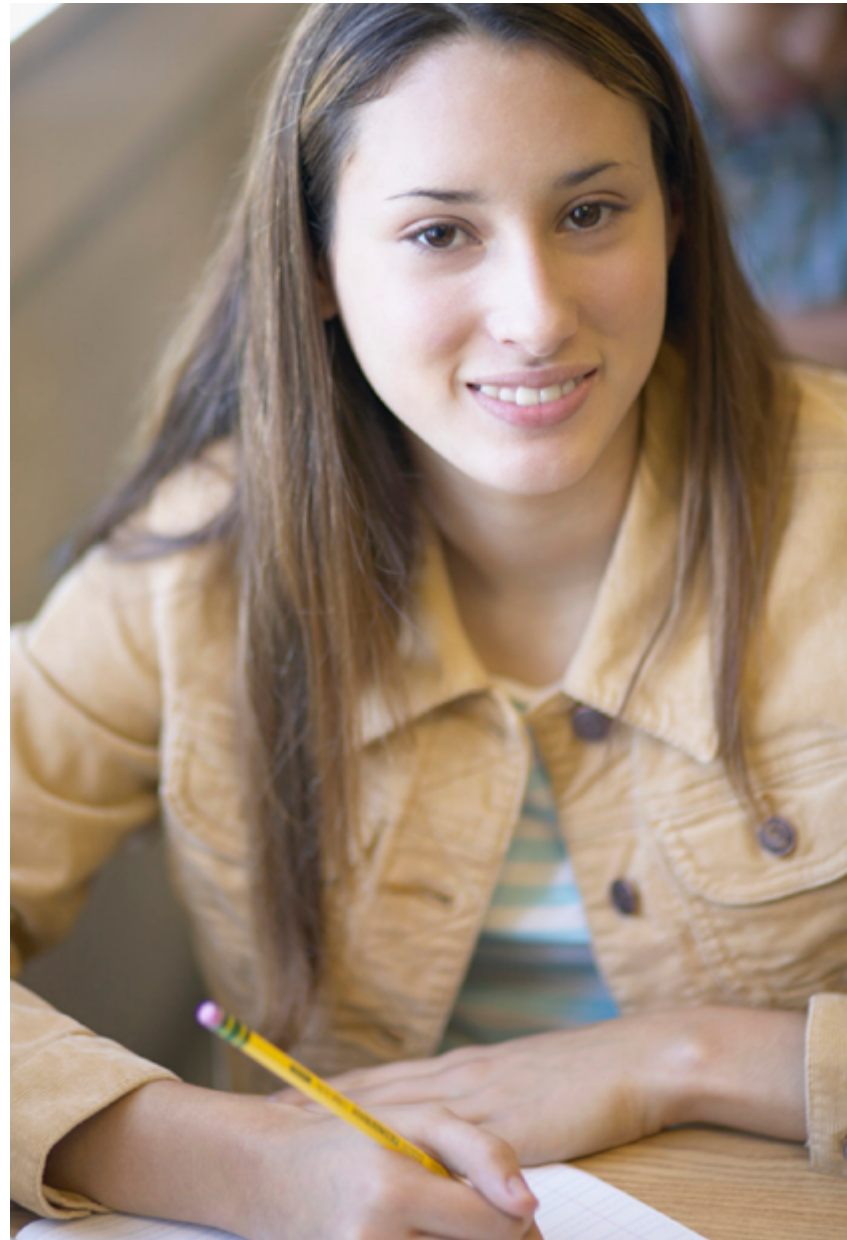
Why do you have to do a Cambridge Research Report?

What is the point of doing your own independent research report? Well, the skills required to research and evaluate data and arguments are the key 'transferable skills' that you will need to succeed at college, university and at work.

Many of you will be at the stage when you are starting to think about university study. When you get to university, you will find that you will be asked to conduct independent research. Your essays, dissertations and term papers will need to be on topics of your own choosing, and you will be evaluated or marked on your ability to use the appropriate research methods and critical thinking skills to produce robust work. The Cambridge Research Report gives you a head start in acquiring such skills.

Remember too that in the world of work you will also increasingly be called upon to produce research reports to support your business. Job applicants who can do high quality independent research are much more attractive than those who cannot, and equally employees who can make the best sense of competing arguments and competing data are more likely to progress than those who struggle to do so.

The Cambridge Research Report will equip you with the confidence to cope with what you encounter at university and the world of work, because you will have had a head start in understanding and using the methods, the analytical skills, and the thinking and evaluation skills that will be the key to success in these worlds.

About this Guide

Some notes about wording

Before we start to consider the research process proper, it is useful to highlight first a few particular words that are used in this guide that may either be unfamiliar to you or are used in a different way to what you might be used to:

'Data' and **'information'**: Doing research is basically the process of gathering information about a particular topic. When academic researchers talk about research information they often refer to it as 'data'. Data can take many shapes and forms. It can be 'quantitative', in that it consists of numerical or 'statistical' information, and it can be 'qualitative', in that it consists of non-numerical information such as words and pictures. Researchers call their information 'data' in order to identify it as the information gathered to answer their research question and to distinguish it from all the other 'information' they might have that is not relevant to their research project. To be more accessible, this guide generally uses the terms information and data interchangeably.

'Sources' and **'evidence'**: When this guide refers to 'sources' we mean the published and unpublished works a researcher draws on which generate data / information for their research project. 'Evidence' is very similar to 'sources', but is used more particularly to mean those sources, data and information that can be used by a researcher to support or discredit a particular claim, argument or theory.

'Critique' and **'criticism'**: A 'critique' is a critical analysis of a topic, argument, publication or piece of evidence. It is 'critical' in that you are using careful, considered, analysis and judgment to critique. To critique is also to be analytic in the sense that you should be separating or breaking arguments and evidence into smaller constituent parts. A common misunderstanding is to equate critique with criticism –with being *critical* or *negative* - to critique can be negative, but it can just as easily be supportive or neutral.

'Research Folder' and **'Research Log'**: Your 'research folder' may be a large folder which acts as a record of your notes, thoughts, quotations, references and data. Whereas your 'Research Log' will be a summary of your work. This research log must be maintained and an electronic version used in support of your Cambridge Research Report.

Research design

How you get from start to finish in one piece.

Learning Objective:

In this section you will learn about:

• The concept of research design and its key stages

So far, we've established what the aims of the syllabus are, we've recapped the submission requirements and key objectives underpinning the course, and we've set out the skills that you will need to demonstrate to succeed in your assignment. We have also started to introduce some of the more technical terms you will encounter. What we have not yet done is look in more depth at the research process itself. Where should you start in doing a research report? How do you start? What are the main stages of the research process?

In this section we will start to analyse the key stages of doing a research project and examine the choices and decisions that you need to make at each of those stages.

The overarching concept of research design

When researchers contemplate the beginning of a new research project they think about the issues they have to weigh up as issues of 'research design'. Research design is the process whereby we work out what our topic is exactly, what our specific research question is, how we answer that question and how we will plan to complete all of the practical things necessary to complete a research project successfully and to the best of our abilities. Research design, therefore, refers to how we come up with what our entire research process is.

What is my topic? → What is my research question? → How will I answer my question? → How will I plan my project?
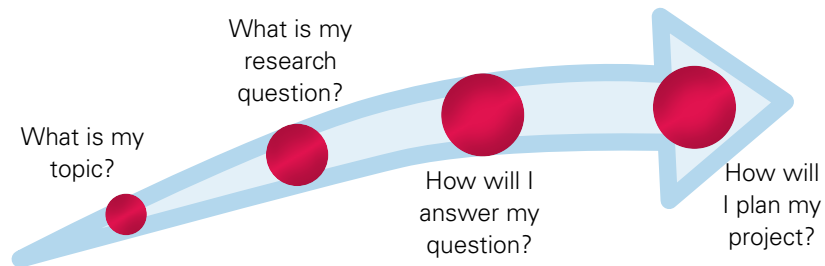
This learner's guide will take the overarching concept of research design and use it to analyse all of the decisions and activities that you will need to consider when embarking on your Cambridge Research Report.

A learner's guide to doing a Cambridge Research Report
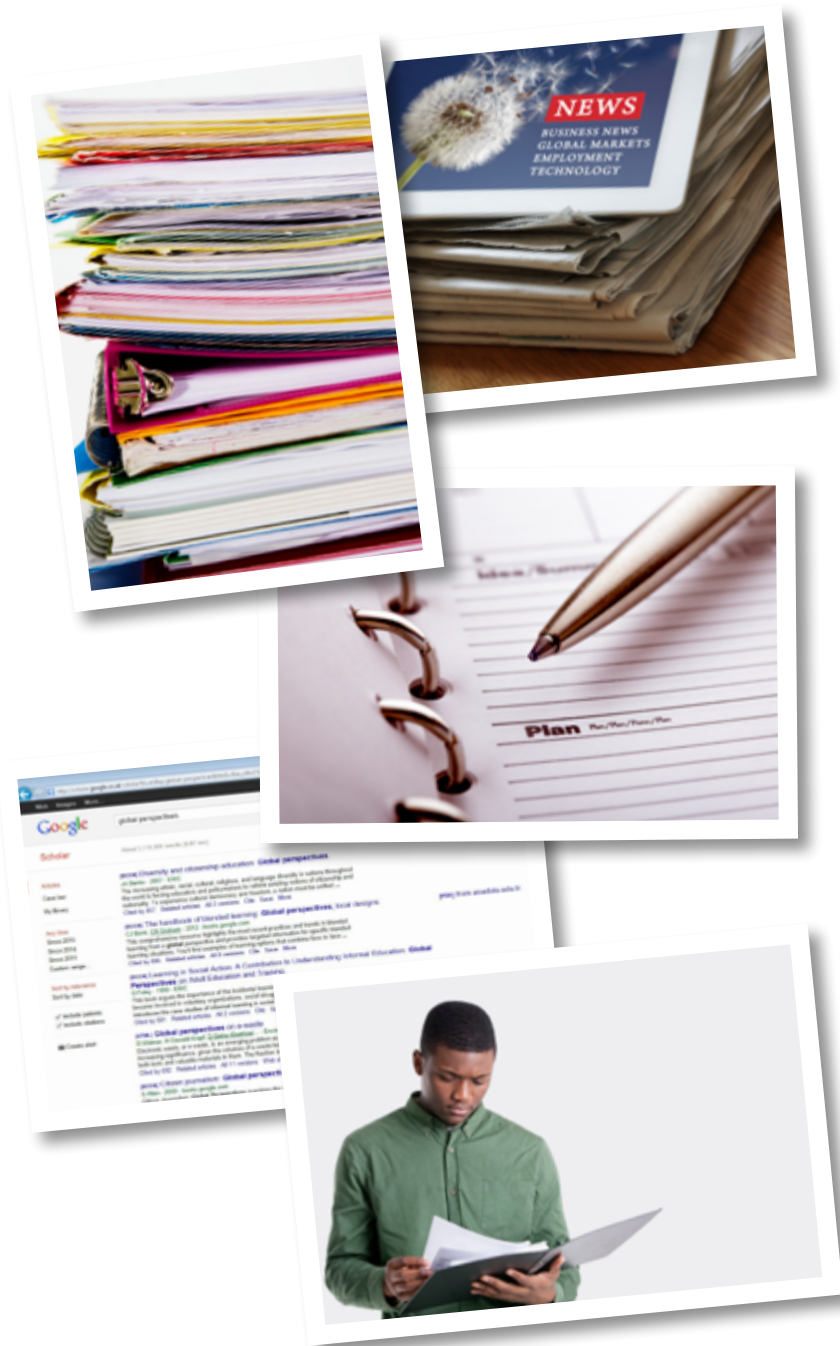
The core stages of research design

The stages of research design can be summarised as follows:

1. Selecting your topic
2. Developing your research question
3. Dealing with practical and personal considerations
4. Desk research: Identifying, searching and reviewing the literature
5. Selecting your methods
6. Gathering primary data (aka 'fieldwork')
7. Analysing your findings
8. Writing up your report.

We can visualise these eight stages as follows:

Selecting your topic ➡ Developing your research question ➡ Thinking about the practicalities ⬇

Gathering your data ⬅ Selecting your methods ⬅ Desk research: reviewing the literature

Analysing your findings ➡ Writing up your research report

The core stages of research design *continued*

With professional research, the stages overlap significantly with one another, and you will see that this idea of the blurring stages - or elements - of research design is a recurring motif in this guide.

Even at the very earliest stage, it is a good idea to start thinking about all of the research design stages listed above, because by thinking through all of the design issues now, you will help yourself come up with a topic that is not only interesting to you but is one that you can research effectively. Importantly, you need to think ahead about the kind of research methods you will need to use when you finalise your question, because, as you will see, the

development of the right research design for you depends very much on the question you have posed.

Even at the start, when you are selecting your topic, you will see that you need to start thinking ahead about your research question, about what literature you will have available and what other methods you may need to use in order to decide whether you have selected a good topic or not.

We might more accurately visualise selecting a topic as follows:

Thinking about the practicalities

Desk research: reviewing the literature

Developing your reaserch question

Selecting your methods

Selecting your methods
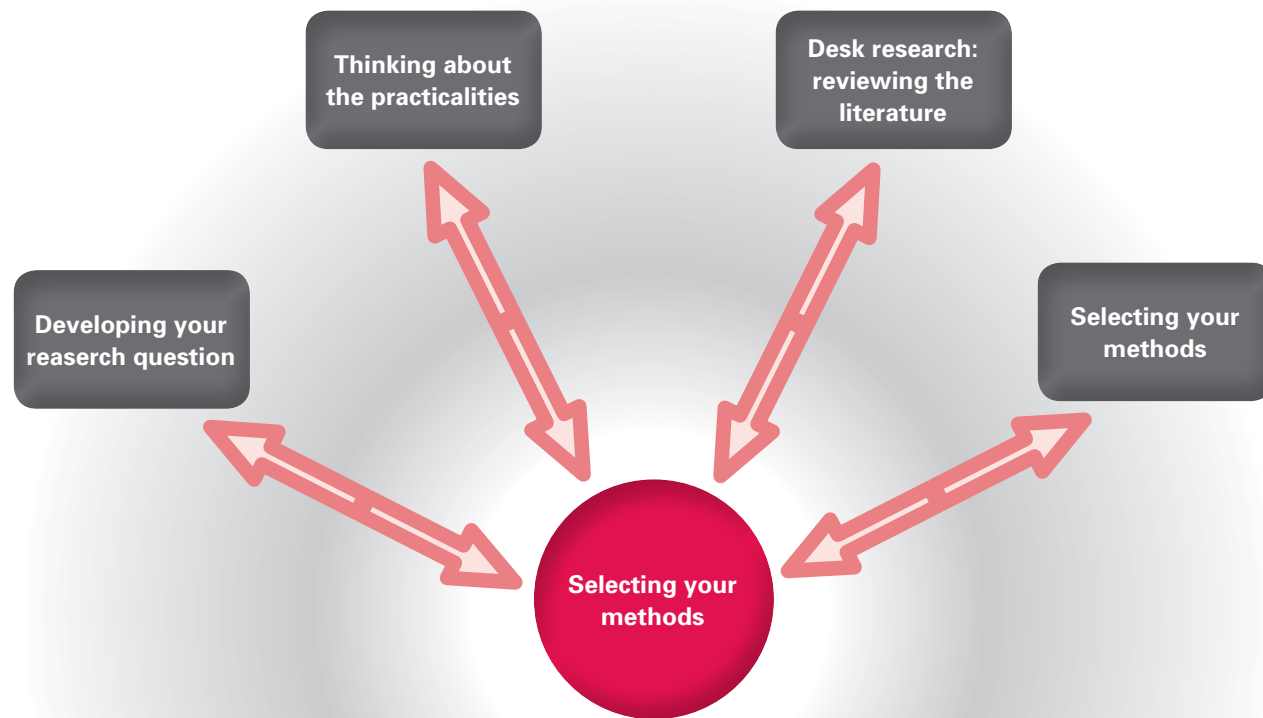
The core stages of research design *continued*

In designing their research, researchers are working through the methodological and practical steps necessary to plan a successful research project from start to finish. For you, designing your research means that you will need to think about the following:

- how you will identify, locate, access and evaluate the best sources of information/data to answer your question
- how you will select the best methods for acquiring information/data to answer your question
- the need to understand something about the 'methodology' or theory of using your methods
- the need to plan for how you manage your information/data
- the need to plan your timetables and consider logistics
- anticipating how you will analyse your information/data
- being ethical and safe when conducting your research

Each research project, whether large or small, has its own unique research design. Therefore there is no one-size-fits-all research design that you can apply to your research question. You're going to have to come up with one yourself to answer your own question.

Try building different research designs using the seven points above:

Coming up with the right research design relies on a number of factors. First, you need to think carefully about your question and choosing the best methods for getting material that will help you answer that question. There are also theoretical and practical, and even personal, considerations that you will need to bear in mind too.

Rearrange, reshape and resize these blocks to create several possible research designs. Can you see how the nature of your research question will affect each of these, and vice-versa?

identify, locate, access and evaluate the best information / data

understanding 'methodology'

select the best methods for acquiring information / data

planning how to manage your information / data

anticipating how to analyse your information / data

being ethical and safe when conducting your research

planning your timetables and considering logistics

Reflecting upon your research design

You will need to reflect upon and explain your thinking to demonstrate to the examiners that you understand the concepts of theory and argument, that you have evaluated evidence, and that you selected research methods and a research design appropriately. It would be useful to demonstrate all of this both in your research log and in your report.

Some books that might help you with your research project

You may find it useful to consult the literature on how to do a research project, and indeed you will find that there are a vast number of books and academic journal articles published. Try to find the book that you find the easiest to follow.

These three are accessible:

- Judith Bell & Stephen Waters, *Doing Your Research Project: A Guide for First-Time Researchers*, Open University Press, Maidenhead, 2014.
- Gary Thomas, *How to Do Your Research Project*, SAGE, London, 2013.
- Zina O'Leary, *The Essential Guide to Doing Your Research Project*, SAGE, London, 2014.

Having looked at the basics of research design it is time to enter upon the first stage.
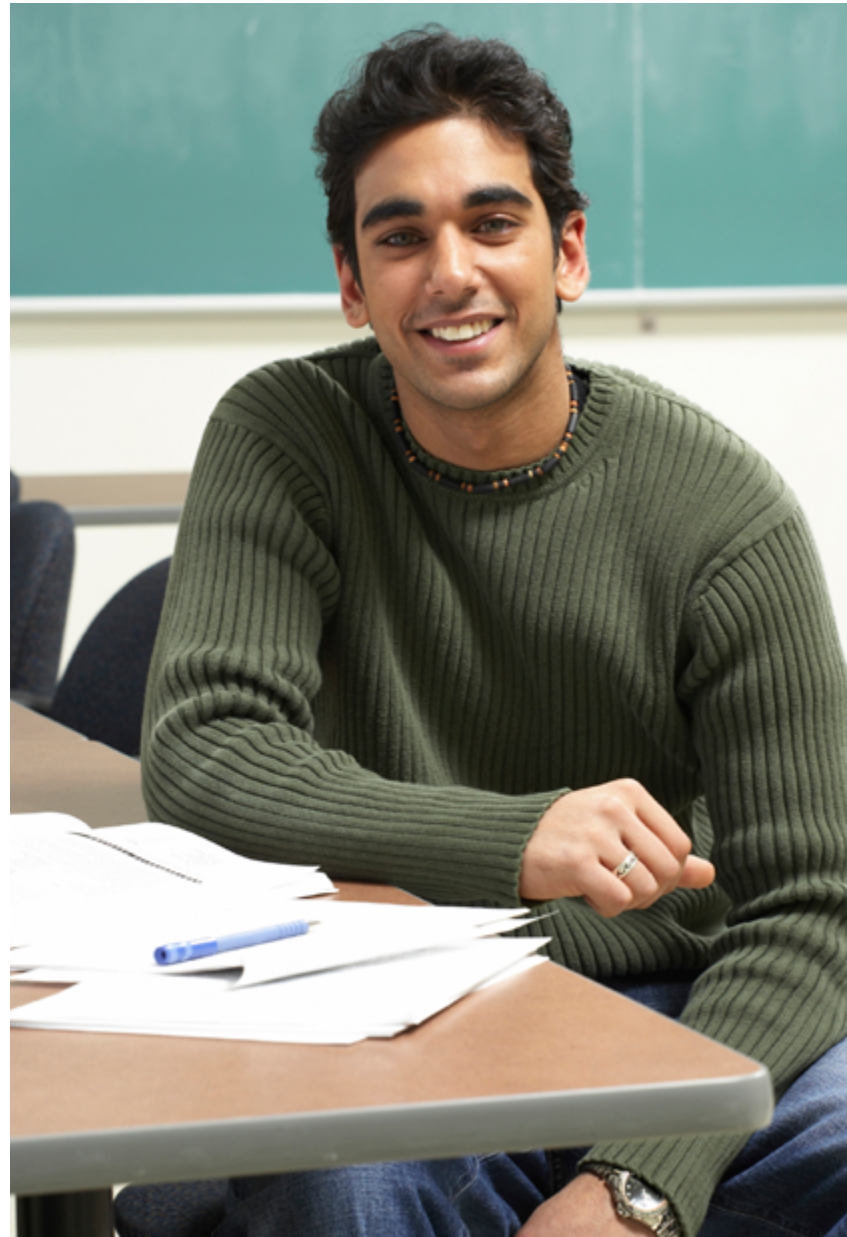
Stage 1. Selecting your topic

Before a researcher comes up with a research question they must first identify the topic they want to study.

Learning Objectives:

In this section you will learn about:

- where you can find suitable and engaging topical areas to consider for your Cambridge Research Report
- how to break your area of interest down into an appropriate topic for research
- practical skills to help test the suitability of the topics you are considering
- the characteristics of a good topic.

Your first task, therefore, is to identify the topic you will study for your research report. You need to do this **before** you even start thinking about a specific question.

You want to get the most out of this experience and you want the experience to draw the most out of you.

To do this you need to find a topic that genuinely interests you.

First, consider what you want the focus of your Cambridge Research Report to be. How and where can you find suitable topics?

Stage 1. Selecting your topic

As you need to find a subject that genuinely interests you, it is worth investing time in finding a topic that:

- has many, genuinely **contrasting perspectives**
- affects a lot of people across time or geographical space, in their social, economic, ethical, cultural and/or political lives.
- Provides opportunity for wide discussion
- If it is a scientific, mathematical or technological topic, allows for some debate to be opened up, with a range of views based on strong principles.

Current events, the subjects you are currently studying or those you wish to study at university might be good sources for you when thinking about a topical area. This diagram shows you how you might turn your areas of interest into a focused research question. In this section we will be considering only the first two stages, but we will work through the rest of this process later on in the guide.

News items / current events / reading / interests / Global Perspectives topics

Principal subjects or A levels

Future courses at university

Identify one or more areas of interest

**Explore in more detail:
Where are the useful sources?
What are the different views?
Identify sub-topics
Identify strands of opinion**

Discuss with a teacher

Criticise and improve

Construct several possible research questions

Select a focused research question

Stage 1. Selecting your topic

You may wish to start by thinking of a number of topics that interest you. You can use the questions in the exercise below to narrow down your options. Take your time to choose a question that you are happy with as changing at a later stage will be much more of a challenge.

You can also download and print off the list of questions for offline use.

Stage 1. Selecting your topic
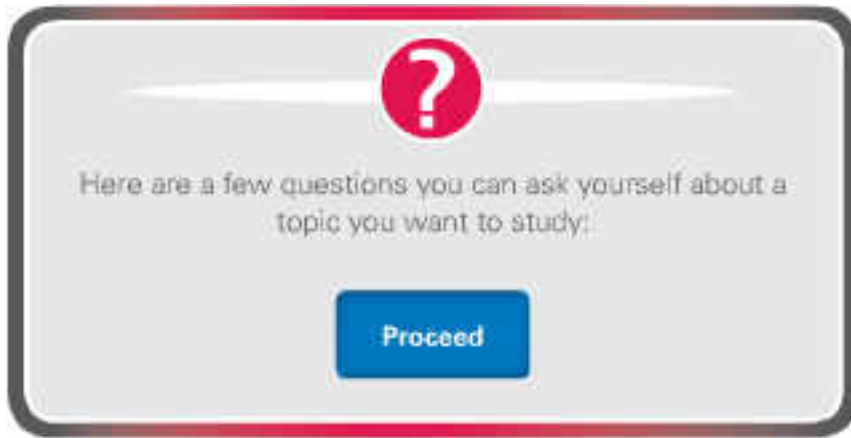
Assessing your topic idea

- Is there a discussion about the topic which gives you a real chance to criticise different evidence, or is the issue self-evident? ☐

- If there is a debate possible, is it one that you care about? ☐

- If there is a debate can you find evidence on both 'sides'? ☐

- Can you establish different perspectives on the issue which have a good range of views, beliefs, and assumptions underlining them? ☐

- Is it an issue which can open up into all sorts of different aspects or is it really quite limited? ☐

- Can you see yourself enjoying the research, developing ideas and actually writing 5,000 words about this topic? For many months? Honestly? ☐

- Can you see the issue being open enough that your own initial ideas might change as a result of the research and the thinking that you undertake? ☐

- Is the interest you have in the topic already sufficient to enable you to start asking a few penetrating questions about it? ☐

- So what? Does this topic **really** give you a compelling answer to the inevitable 'so what?' question that one of your friends or relations is bound to ask you at some point? If you can't answer the 'so what?' question, you're probably considering the wrong topic for you. ☐

Stage 1. Selecting your topic

Once you have cut down a list of possible topics to one or two probable topics that you think you might like to study further, you should then subject your remaining topic(s) to further questioning and reflection to see if the topics are robust.

Use the activity below to test your remaining topic(s). Be honest with yourself as you evaluate your answers, as it really pays over the long term to find a topic that not only interests you but has sufficient mileage to keep you going over the coming months.

Try explaining what you want to research to a friend or family member. If you would not want to talk about it, think again; it may be wise to think of an alternative topic.

It may also help if you select a topic that fits well with the 'global perspectives' part of your course. Though it is not a requirement of the Cambridge Research Report to have a topic with global perspectives, ones that do will naturally provide opportunities for discussion, debate and opportunities to understand more about the world.

Why are you interested in the topic?	
Are there different opinions about it?	
Are there different aspects to the topic – for example, economic? Moral? Political? Religious? Historical?	
Can you identify at least three specific pieces of evidence supporting different opinions about the issue?	

Stage 1. Selecting your topic

The different dimensions of your topic

A good way of analysing a topic – of breaking it down into smaller, more manageable parts – is to think about its disciplinary dimensions. By doing this at an early stage you will also be giving yourself a head-start in identifying the materials you will need to read and you will already be thinking about different ways that your topic can be analysed and written about. By applying the 'prism' of different disciplines you will also find that you are looking at different ways of asking questions about your topic.

To do this you will need a basic working understanding of the aims of each discipline, and these are summarised below.

None of the disciplines are mutually exclusive ways of looking at the world. When it comes down to it, researchers in all of the disciplines are absolutely encouraged to investigate all of the relevant dimensions of a topic. Historians, therefore, consider many dimensions such as economic, geographical and social just as geographers could consider historical, business and health impacts.

Stage 1. Selecting your topic

The different dimensions of your topic *continued*

A good way to start breaking up your topic into sub-topics or themes would be to draw a grid, with your research topic labelled across the top of the grid and with all of the main disciplines listed to the side. Think about and **note down the ways that your topic could be dealt with** by applying the approach taken by the different disciplines.

Research Topic:	Relevance to my topic
Historical: The historical dimension of any topic is the way that it has emerged and developed over time from its past origins onwards. Some histories take fixed periods in the past, yet even contemporary, modern-day issues can only be fully explained when we start to think about how they emerged from specific origins.	
Economic: The economic dimension of a topic concerns the manner in which resources effect and are affected by your topic. Resources are scarce and limited. Such resources can be monetary or financial, but they could also be physical resources or types of service and behaviour.	
Political: The politics of an issue is the manner in which power relations are entwined with a given topic. Political scientists look to see who has control, who governs and who benefits in any given situation, and will look at key organisations and individuals in particular.	
Social: The social, societal, or sociological, dimension of an issue relates to the way that a topic manifests itself (and maybe is caused) by society as a whole, and looks at the structures, habits and organisations that govern everyone's lives. Social or sociological research often looks at such themes, for instance, as how education is organized, at how crime is dealt with, or how identity is constructed.	

Stage 1. Selecting your topic

The different dimensions of your topic *continued*

Research Topic:	Relevance to my topic
Cultural: The word 'culture' can sometimes be used interchangeably with the word 'society'. When anthropologists talk about 'culture' they are looking at how individual behaviour is shaped by the rules and rituals of a group. For others, 'culture' refers to the artistic output of a society, and looks at art, music, theatre, film and literature.	
Business: A business analysis of a topic would seek to understand how commercial bodies – whether large or small – operate in the context of that topic. It would look at what kinds of markets and business organisations exist, and how they shape and are shaped by the topic in question.	
Scientific: For the purposes of your research report you should probably think of 'science' not so much as the application of specific rigorous methods to produce scientific knowledge, but more in a sociological or historical sense of considering what scientific developments – inventions, theories, etc. – have served to shape and change your topic.	
Psychological: A psychological perspective will ask how a topic impacts and is impacted by the make-up of individuals. Psychologists take in a wide range of approaches from looking at childhood and society to the biology of the brain to seek to understand individual and group behaviour.	
Health: In considering the health dimensions of a topic we are looking at how our topic impacts on the physical wellbeing of those affected. What might be the impact on life-expectancy, risk of disease, etc?	
Geographical: Geographers look at how 'place' or location impacts a topic. How are issues such as climate, geology, land use, urbanisation etc. are impacting your topic? How are such things as oceans, forests and ecosystems impacted by and impacting the topic?	

Other ways of exploring into your topic

There are other methods that you can use to open up or explore your topic, so think about whether your topic contains the following dimensions:

YOUR TOPIC

EXPLORING YOUR TOPIC

Stage 1. Selecting your topic

Other ways of exploring your topic *continued*

With so many different ways of sub-dividing and thinking about your topic you should already have plenty of ideas about how you will use these different dimensions to structure your research, frame your question and even perhaps divide up your final report.

The table below illustrates two examples of how exploring a global topic through different themes or disciplines can lead to the generation of what we might term 'global issues' and in turn to identifying different perspectives in tackling your research topic:

Global topic	Themes	Global issue	Perspectives
Example 1: Tourism	Culture Economics Environment Ethics	The extent to which tourist companies embrace ethical tourism	Tourist companies should be obliged to pay a local tax to help fund environmentally sound local projects. OR Tourist companies attract and generate wide economic benefits for a locality and should not be expected to pay local taxes on top of this.
Example 2: Rise of global superpowers	Politics Economics History Technology	The relationship between regulation of the internet and the rise of a global superpower	Unregulated control is essential for the emergence of a global superpower. OR A global superpower can only emerge if it controls the internet.

Use the tool below to take some of the successful topics you tested earlier and, using the lenses discussed above, see if you can develop the related themes, issues and perspectives.

Global topic	Themes	Global issue	Perspectives

Other ways of exploring your topic *continued*

Checklist: What are the characteristics of a good topic?

Use the checklist below to check your progress in identifying your research topic. The more criteria you can tick below the better your topic choice is:

☐ Are you really interested in the topic?

☐ Are you really **really** interested?

☐ Do you have access to a good deal of information on the topic?

☐ Are there debates, controversies and ongoing arguments about the topic?

☐ Do you have personal insights on the topic?

☐ Does the topic have contemporary resonance?

☐ Can you study the topic ethically, without breaking any rules and without putting yourself and others in any danger?

☐ Does the topic have an international, national or local dimension?

☐ If the topic is a really big one, can it be broken down into more manageable sub topics?

☐ What disciplinary and other lenses and themes can be applied to the topic:

☐ Historical
☐ Economic
☐ Political
☐ Social
☐ Cultural
☐ Business
☐ Scientific
☐ Psychological
☐ Health
☐ Geographical
☐ Environmental
☐ Technological
☐ Religious
☐ Philosophical
☐ Personal
☐ Ethical

Other ways of exploring your topic *continued*

Finally…

Your teacher might ask you to put together a poster that gives you the opportunity to answer the following questions about your chosen topic:

* Why are you interested in this topic?
* What sources are available?
* What's the debate?
* What are the main positions held in the debate?

Here's an example:

Developing Your Research Question

Here's a template to download and use:

Why are you interested in this topic?

Neuroscience is a very fascinating and complex area of science and there are still so many things about the brain that are undiscovered and which scientists still do not fully understand.

Dreaming is something most people experience on a regular basis and is usually taken for granted. So why do we dream? In my research I will explore the function, and thus importance, of dreaming.

What sources are available?

Awareness — biorhythms, sleep and dreaming

- Bio-psychological book by Evie Bentley which concisely covers a range of theories on dreaming, including neurobiological theories, a psychodynamic theory and a cognitive theory.

Stroke victim robbed of her dreams

- Article from the New Scientist which includes some conclusions reached by scientists on the function of dreaming based on a case study of a stroke victim who lost the ability to dream for several months

Refocusing the neurocognitive approach to dreams - a critique of the Hobson versus Solms debate

- Journal article by G Wiliam Dornhoff which examines the ongoing debate between activation—synthesis theorist J Allan Hobson and psychoanalytic theorist Mark Solms about the nature of dreaming.

Are dreams purposeful neurophysiological processes or random firings of brain activity?

What's the debate?

There is a great deal of debate surrounding the function of dreaming, of which there are neurobiological theories and psychodynamic theories.

Some theories are that dreaming …

"has no real function—it only reflects mental activity"

"is a side effect of the removal of irrelevant or faulty connections between neurones"

"is an means of replenishing neurochemicals in the brain"

"is a way of protecting our sleep—if something threatens awakening you experience a dream instead"

The intellectual engagement …

This research question will allow me to explore an aspect of neuroscience which is not covered in any A-Level Chemistry or Biology studies. I will be able to analyse different perspectives posted by scientists, and even psychologists, who have expertise in the field of dreaming, and thus I will be able to come to an intellectually reasoned conclusion based on the selected arguments.

Stage 2. Developing your research question

Formulating a good research question –
getting the wording right – forms a core part
of the research process.

Learning Objectives:

In this section you will learn about:

- how to develop a research question from your chosen topic
- how to choose the wording of your question
- how to prepare and submit your Outline Proposal Form
- the importance of an ongoing critique of your question

It is important to distinguish between topics and questions. They are not the same; for example, 'The Second World War' or the 'The Fine Art Trade' are topics, not questions.

Having chosen your topic in <u>Selecting Your Topic</u>, your next task is to develop an appropriate research question. The syllabus states clearly that **the title of the report must take the form of a question and this is included within the assessment criteria.**

You need to come up with a real researchable question, so that your work will offer a high quality of debate: it should address something that can be evaluated for which there is no simple solution. There must be room for you to develop your own interpretation of your research question in your research report, so you need to develop a voice of your own and a perspective of your own on your topic.

Doing this well takes time and careful consideration. When you write up your report it must be made clear to your readers how and why the question was developed. Considerable thought must be given to this; why, for example, is the question worth asking, and how did it develop throughout the research process?
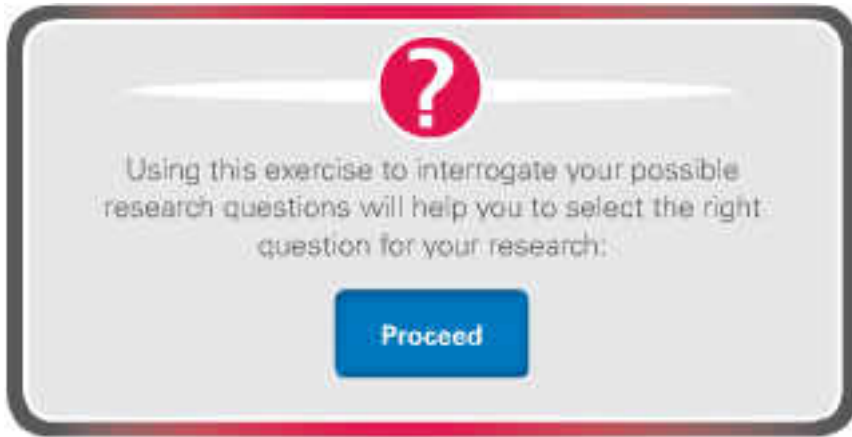
Stage 2. Developing your research question

In Selecting Your Topic you completed the first two sections of the diagram below. You have decided on your topic, and have established that it is interesting and much discussed, with enough views on both/many sides to make it a good topic to research further. We are now going to look at the next two sections:

News items / current events / reading / interests / Global Perspectives topics

Principal subjects or A levels

Future courses at university

→ Identify one or more areas of interest

→ Explore in more detail:
Where are the useful sources?
What are the different views?
Identify sub-topics
Identify strands of opinion

← Discuss with a teacher

Criticise and improve

Construct several possible research questions

Select a focused research question

Stage 2. Developing your research question

Developing and selecting the question

The next stage is to choose a question that will enable you to open up your topic so that all of its different aspects are explored. As you did when choosing a topic, you may wish to start with several possible questions and subject each of them in turn to the exercise below.

?

Using this exercise to interrogate your possible research questions will help you to select the right question for your research:

Proceed

Research Question Exercise

- It is an exploratory question that opens up different aspects of your topic ☐

- There are different opinions and key controversies for you to explore and scope for different levels of discussion ☐

- The question poses a problem ☐

- The problem is a **researchable** problem ☐

- The question anticipates your research design ☐

Stage 2. Developing your research question

Phrasing your research question

The wording of your research question is of vital importance. By selecting the best words and phrases to 'open up' a question – to make it 'exploratory' – you will help yourself to open up your research design so that your final research report will include many different aspects of the question and also many different ways of looking at it. The more aspects of the question you can explore in your report the better.

Exploratory, 'open-ended' questions: The kinds of words and phrases that open up a question – to make it 'exploratory' – include:
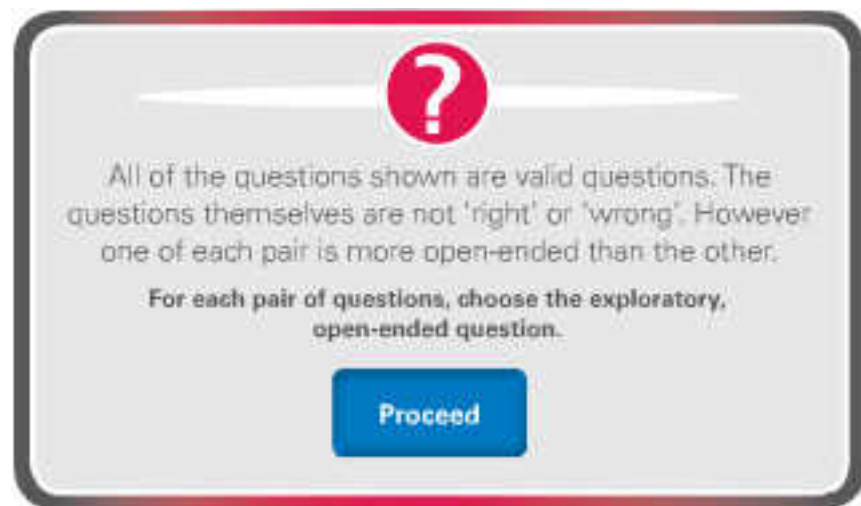
'To what extent...' or 'How far…' or 'Should…'

However, there is no formula. 'Is' can open up a debate. The question 'Is Marxism still relevant today?' can open up a big debate with many ways in. 'How significant is technology in affecting the global economic balance?' is better than 'Explain why technology has been significant in affecting the global economic balance'

Conversely, it is wise to avoid phrasing your question in such a way as to close down the avenues of exploration and debate. Phrases that it might be wise to avoid include:

'What…?' or 'Why...?' or 'Explain…'

Try to identify the exploratory, open-ended questions in the following activity:

All of the questions shown are valid questions. The questions themselves are not 'right' or 'wrong'. However one of each pair is more open-ended than the other.

For each pair of questions, choose the exploratory, open-ended question.

Proceed

Completing and submitting an Outline Proposal Form

Once you have identified your topic and formulated your question you need to submit an Outline Proposal Form to Cambridge. They will review your proposed research project and will offer you some advice, may ask you some questions to reflect on, and will generally give you feedback. This is part of the process of reflection that you will be carrying out throughout your project and will provide you with valuable insights into your proposed project at this early stage. Ultimately it will be your decision on whether or not to incorporate any advice given to you, but it is strongly recommended that you at least discuss it with your teacher.

Completing a Research Planning Sheet may help you to outline your topic and the main issues you have identified which you will be addressing in your report. This in turn will help you to complete your Outline Proposal Form. You can download a Research Planning Sheet here:

Your teacher will have the Outline Proposal Form that you will need to complete but we have included the front of one which you can download here:

Use the Research Planning Sheet and the draft Outline Proposal Form as many times as you like to refine your proposal before you submit it to Cambridge on the actual Outline Proposal Form. Your teacher has examples of completed planning sheets and proposal forms if you would like to see them.

Phrasing your research question *continued*
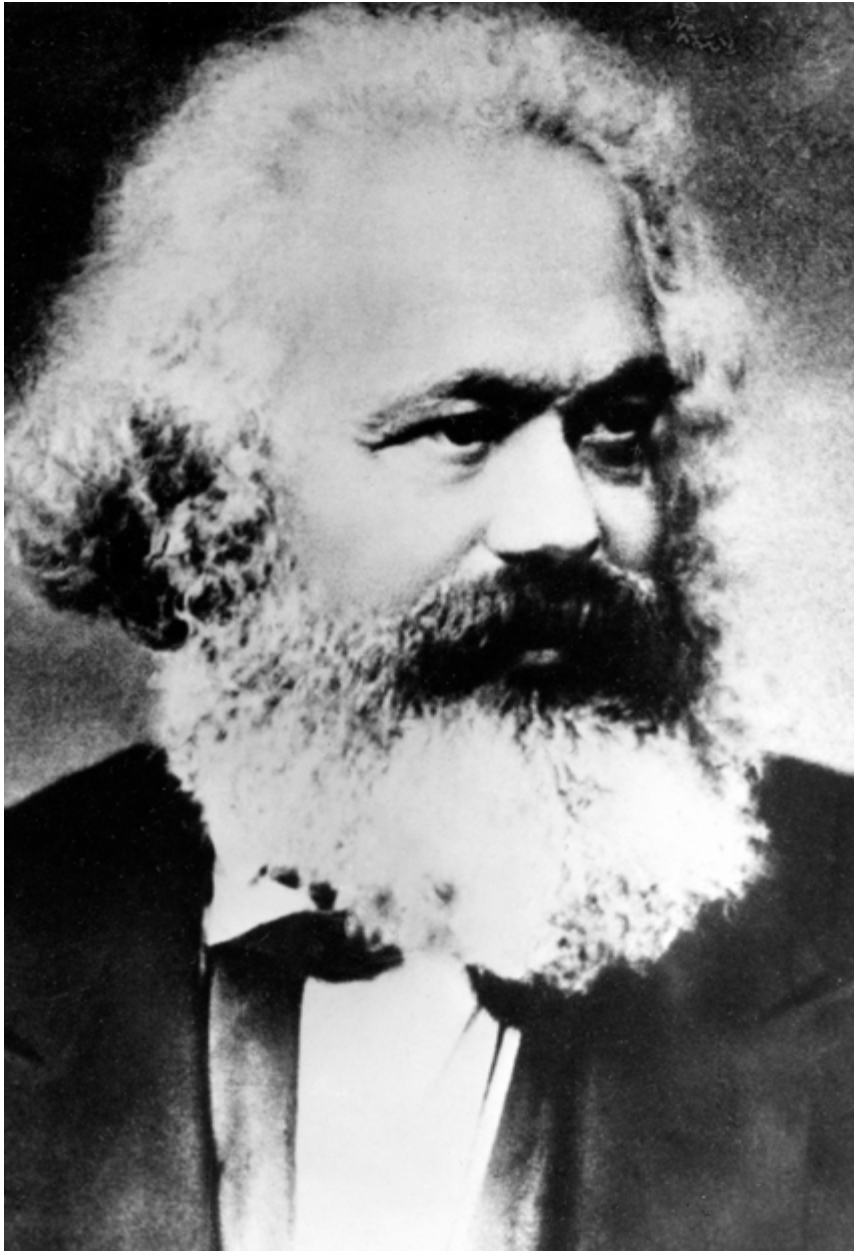
Critiquing your question

However you phrase your question to begin with, you need to ensure that you go about researching and **answering your question in a critical manner**. The best way to do that is to subject your own question to constant critique throughout the research process. The feedback that you receive from Cambridge in response to your Outline Proposal Form will also help you in this process.

Whether you are doing your research or writing up your research report, keep asking yourself:

- What does my question mean?
- Is there another way I can interpret my question?
- Is there yet another way I can interpret it?
- Is my question still valid for the way my research is taking me?
- Do I need to rephrase my question in light of my research?

Using this as a continuous, on-going process will help you to come up with alternative interpretations that will in turn help you look for new information and to write about the different dimensions of your research in your final report.

You can download the questions listed above so that you can keep referring to them easily throughout your project.

Now that you have settled upon your topic and research question you need to work out how you will go about researching your question. This process of identifying which methods you will use and which sources you will examine is known as 'research design' and is explained in the next stage.

Doing research does not happen in a vacuum – you need to plan every aspect of the process.

Learning Objectives:

In this section you will learn about:

- identifying and evaluating your resources
- creating and managing a research timetable
- keeping to your research budget
- the research folder and the Cambridge Research Log
- quantitative and qualitative datat
- coding and indexing data

This stage will address the very important question of the practical and personal dimensions of research design. These range from how and when you will get hold of the specific books or reports you need to read, to how you are going to fit writing up your research report alongside the many other things that will be happening in your life at the same time.

Stage 3. The practical and personal considerations of research design

Evaluate your available resources

The first critical question facing you is the need to understand what access you have to sources of information and data.

Before you read any further, take a few minutes to think about the sources of information that are available to you, and how easy or difficult it will be for you to access them. Try to think of as many different types of sources as you can – not all sources of information are in print. You can fill in the fields below or use the downloadable table to note down your thoughts and ideas:

For some people the easiest way to access many different sources of information and data is through the internet. If you have access to the internet, and are lucky enough to go to a school that subscribes to good published sources of online information, or if your school has a well-stocked library, you can consider an approach known as **desk research**. Put simply, desk research involves using the internet to identify and access high-quality published information on your research topic. We will discuss desk research in more detail in the .

Source of information or data	How will you access this source?	Will this be easy or difficult to access?

Working without a good library or good internet access

If you do not have easy access to the internet, or if your internet connection is weak and unreliable, you will need to consider using other methods to gather information and data. Indeed, even if your internet access is good and reliable, you should still consider using other methods either in tandem with your desk research or even as the main method of gathering your data. It is important that any research is thorough, structured and planned.

There are many effective methods that you can use if your access to the internet or a good library is not sufficient to allow you to do desk research, but you will need to have selected a topic and designed a research question that will allow you to use those methods.

For instance, if you have only limited library resources and internet access, you probably need to avoid topics that can really only be investigated using

materials found in secondary sources on the internet and in books and journals, such as the economics of the EU or the politics of abortion in the USA. In situations like this, you need to select a topic that can be tackled using methods such as interviews, focus groups and surveys. These research methods will require you to rely on contacting people to interview or survey, which may mean people who are local to you, so you will need to think of a topic and a research question that can reasonably be answered by talking to the kinds of people you know you will have access to.

In light of what you have learned above, it would now be a good idea to critique your choice of topic and research question. **The activity on the next two pages should help you with this.**

Working without a good library or good internet access *continued*

Look back now at your chosen topic and research question, then complete the activity below for each of them to find out if your choices are suitable for your available resources.

My chosen topic / research question is:	

Do I need to use the **internet** to research this properly?

☐ **YES** – continue to the table below   ☐ **NO** – move to the next section

Internet access	Yes	No	Comments
Do I have access at home?	☐	☐	
Do I have access at school?	☐	☐	
Do I have access at a public place such as a library or internet café?	☐	☐	
If I have to use a public place, do I have to pay for it? If so, how much?	☐	☐	
Is the access I have reliable and available at the times I will need it?	☐	☐	
Evaluation: Is my internet access adequate for my chosen topic/question?	☐	☐	If you answer **Yes**, proceed to the next page. If you answer **No**, you should consider returning to Stage 1 or Stage 2 to choose a topic or research question that is more suitable for the resources available to you

Working without a good library or good internet access *continued*

Do I need to use a **library** to research this properly?

[ ]   **YES** – continue to the table below

[ ]   **NO** – you have completed this activity. Your topic and/or research question may be suitable for the sources of information and data available to you.

Internet access	Yes	No	Comments
Do I have a library at school?	[ ]	[ ]	
If yes, does it have the resources I need for my chosen topic/question?	[ ]	[ ]	
Do I have access to a public library?	[ ]	[ ]	
If yes, is the access I have available at the times I will need it?	[ ]	[ ]	
Does the public library have the resources I need for my chosen topic / question?	[ ]	[ ]	
Is the public library connected to other such libraries in the country so that I can access a wider selection of resources throughout the whole library network?	[ ]	[ ]	
Evaluation: Is my library access adequate for my chosen topic/question?	[ ]	[ ]	If you answer **Yes**, your topic and/or research question may be suitable for the sources of information and data available to you. If you answer **No**, you should consider returning to Stage 1 or Stage 2 to choose a topic or research question that is more suitable for the resources available to you.

Once you have evaluated the research resources available to you, and are confident that your chosen topic and research question are suitable for those resources, you will need to design a research timetable.
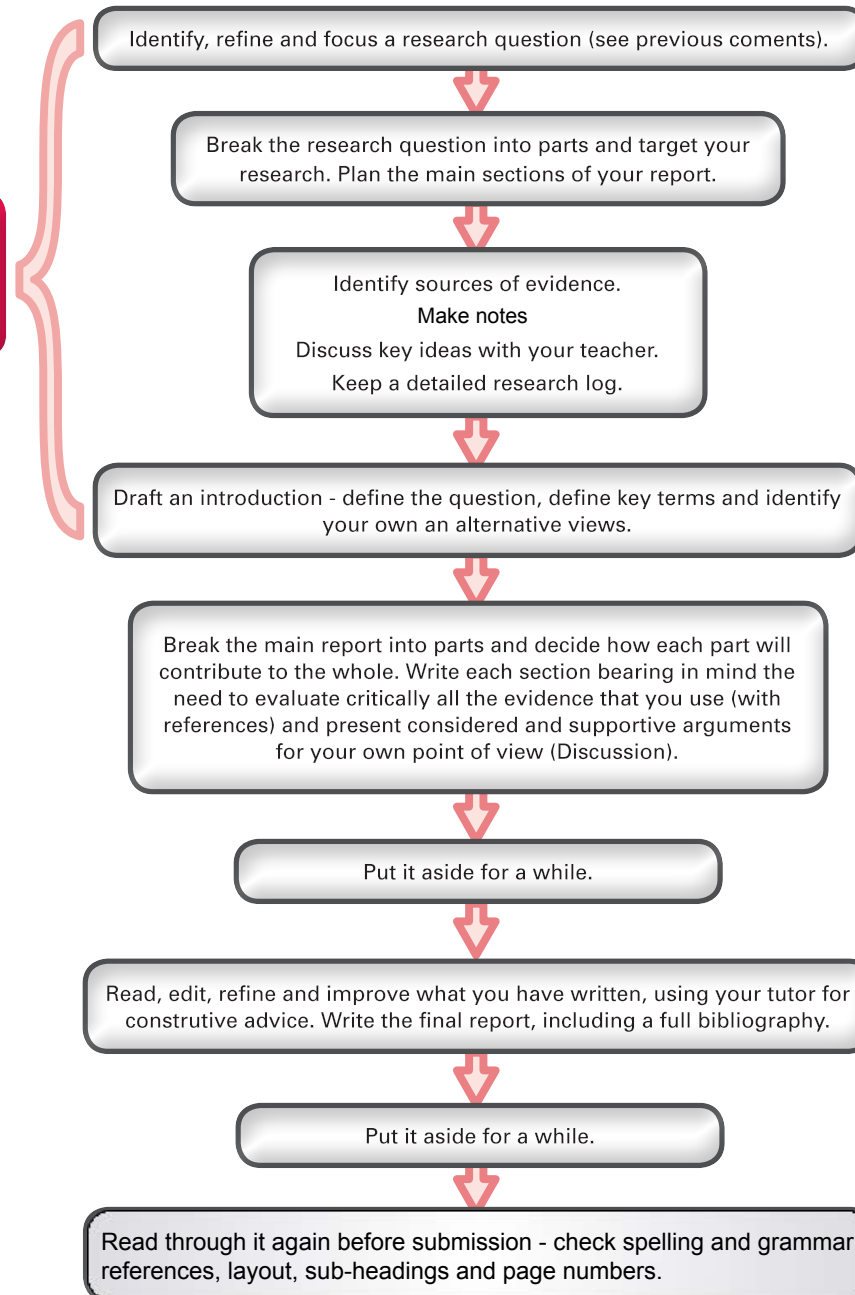
Managing your timetable

It is a good idea to sketch out a timetable at the very beginning of your project, making note of particular deadlines that you need to meet including any allocated deadlines for identifying your topic and finalising your question. But the research process itself will need its own detailed timetable that will allow you to benchmark your progress and anticipate any major pressures on your time. Figure 4 right may help you visualise this process.

Taking about 50% of the time available

Figure 4 *Planning your timetable*

Identify, refine and focus a research question (see previous coments).

Break the research question into parts and target your research. Plan the main sections of your report.

Identify sources of evidence.
Make notes
Discuss key ideas with your teacher.
Keep a detailed research log.

Draft an introduction - define the question, define key terms and identify your own an alternative views.

Break the main report into parts and decide how each part will contribute to the whole. Write each section bearing in mind the need to evaluate critically all the evidence that you use (with references) and present considered and supportive arguments for your own point of view (Discussion).

Put it aside for a while.

Read, edit, refine and improve what you have written, using your tutor for construtive advice. Write the final report, including a full bibliography.

Put it aside for a while.

Read through it again before submission - check spelling and grammar, references, layout, sub-headings and page numbers.

Managing your timetable *continued*

How to construct a research timetable

The best way to put a research timetable together is backwards. Start by making a note of your final submission deadline, and then work backwards to include the following activities:

1. Redrafting and polishing your research report
2. Receiving feedback on your report
3. Submitting your draft report for teacher's feedback – is there a deadline for this?
4. Writing up your first draft
5. Finalising your arguments and deciding what to include and exclude
6. Planning your report write up – see Stage 8 for further advice on planning your time for this and the next stages above
7. Analysing your data
8. Completing unfinished details
9. Gathering your data (include all the different activities and try to be realistic and work out what time will be needed for each activity)
10. Reviewing the literature
11. Searching for and identifying the literature
12. Finalising your research design
13. Checking in with your teacher about your research design
14. Devising the first draft of your research design
15. Framing your research question
16. Selecting your research topic

Your timetable should include not only an outline of the kinds of research activities that you will need to do to complete your research project, but should also include all other significant impacts on your time in the coming months. So if you have large projects to do for other courses, if you are going on a holiday, have other exams to plan around, or if you have other family commitments and work responsibilities, all of these things should be in your timetable so you can plan ahead to work around them.

You can download this spreadsheet which you can use to plan your Cambridge Research Report schedule. Use the fill colour function to block out time when you will be busy on each activity related to your Cambridge Research Report. You can also block out periods when your have other commitments. By setting out your timetable like this, you will be able to see where you will have busy periods, what deadlines you need to meet, where you can work on activities in parallel and where particular activities can't happen until another one has happened.

Allow a full day to draft your research timetable, and be aware that **you will need to revise your timetable as events change and new things crop up**.

> **Tip: Know your strengths and weaknesses when timetabling!** It is important that you are as honest with yourself as possible when timetabling your work. If you know, for instance, that you are a slow writer who likes to rewrite lots of things, give yourself more time to write up. If you need to travel a long way to do an interview, factor the travel time in to your plans.

Managing your budget

If you plan to use the internet, use the phone to conduct interviews or if you plan to travel to support your research, you will need to work out exactly what you can afford and plan your budget accordingly.

Only you will know what your budget limitations will be, and it is essential that you consider them. It would be a disaster for your project if you found that you could no longer access the internet, or travel to the library or to an important interview because you had run out of money.

If you are going to have to work to a budget for your project, this budget planning and tracking tool which runs in Excel may help:

If you are unable to run the interactive tool in Excel you can download the tables as templates for making your own budget planning and tracking calculations. If you are using them manually, use a pencil for the 'Total Spent' in the tracker table so that you can change this easily each time you make a new entry into the table.

You can use the table below to help you work out how much you may need to budget for your research project.

Double-click on the table to begin. As you add each item to the list and put how much it will cost into the 'Cost' column next to it the total column will show you how much the project will cost you in total for all of the items you have listed.

Research Report Budget Planner

Item	Cost	Total

Managing your budget *continued*

Once you know how much you need to budget for your project you can use the table below to keep track of what it actually costs you.

Double-click on the table to begin. It is important to start by entering the amount of money that you have available for your budget at the top of the 'Balance' column, even if this amount is zero. After that the 'Balance' column should update automatically. As you enter each item you spend for your project and its cost, the table will keep track of how much you have spent in total (at the bottom of the 'Cost' column) and how much of your budget is left for you to spend (as a running balance in the 'Balance' column).

Research Report Budget Tracker

Date	Item	Cost	Balance

Handling your data

The next practical consideration when working out your research design is the question of how you will 'handle' your data. There are two elements to this issue, the quantity of data you will gather and the type of data.

Most researchers find it difficult to know when to stop gathering information for their research. It seems to be a necessary part of the process of doing research that you will need to gather more data than you will ultimately end up writing about in your report. This is because as you develop your thinking on your topic you will start the process of selecting what to include and what you will not include in your final report. In order to do this well you will need a system in place that allows you to keep track of all the information you have so that you do not lose or forget things when you start doing your analysis and writing up.

Stage 3. The practical and personal considerations of research design

Keeping a research folder and developing a system to store your data

The best way to handle your data is to keep a research folder. This is a record of everything you have looked at, thought about, and collected in your researches. It should consist of different well-organised files containing all of your notes, your ideas, your transcripts, your data, even your reflections: everything in fact that you gather and think about during the research process.

A research folder allows you to keep track of everything that you have looked at over the full length of your research. It should be well indexed and should be organised in such a way that allows you to access, as easily and logically as possible, the information that you need.

You can keep a research folder in many different ways. Some researchers use computer programs such as Excel spreadsheets or Word documents to maintain a journal, while other researchers prefer using a paper notebook to keep track of everything. It really is up to you to find the way that works best for you.

The activity below will help to kick-start your thinking on how to design your research folder.

Questions to consider when designing your research folder:

1.

1. First, you should estimate what percentage of your resources will fall into each of the following categories:

a. Will they be electronic / online? ☐ %

b. Will they be paper based, i.e. books, and journals? ☐ %

c. Will they be audio or video recordings? ☐ %

d. Will they be personal interviews or surveys that are recorded on paper? ☐ %

2.

2. Next, you should estimate what percentage of how you store your research will fall into the following categories:

a. Will it be electronically / on a computer? ☐ %

b. Will it be in hard copy / on paper? ☐ %

c. Will you be using other media such as audio or video? If so,

   i. How much will be stored digitally on disk or computer? ☐ %

   ii. How much will be stored on tapes / hard copy photographs? ☐ %

3.

3. Your answers to the above should help to guide you as to the most appropriate form of research folder for your particular project:

a. Will an electronic folder on a computer work best for my resources and research? YES ☐ NO ☐

b. Will a notebook or 3-ring binder work best for my resources and research? YES ☐ NO ☐

c. Will I need to use a combination of the two? YES ☐ NO ☐

What sort of things should your research folder include?

Your research folder should be a complete and faithful record of all your research activities from the moment you embark on answering your question. You should deposit not only the data that you gather into the folder, but also record your ongoing thoughts and reflections too. You need to be careful and diligent to not leave anything out, because without a full reflective record of your thoughts or your findings it will be much harder to write up your research report at the end of the course.

Here is a list of what ideally you need to include in your research folder:

a. All research information and data gathered (ideally with an indication of the date gathered)

b. All quotes, clearly and fully referenced with complete bibliographic information

c. Analysis pages – notes about your thinking on interpreting and analysing what you have read

d. Reflections pages – a kind of ongoing diary where you record your changing thoughts and standpoints towards your topic

e. Theory and argument pages – where you make note of particular theories that you and other authors have on different aspects of your question

f. Emerging themes pages – a good research report will be sub-dividing into sections, each looking at different themes or elements of your question. Themes will emerge as you dig deeper into your project and you will need to make a note of all of your thoughts about this

g. Calendar – you could add your timetable to your research folder

h. Keep a record of all references, citations and quotes – do this by hand on paper, manually in Excel or Word, or by using Endnote or Zotero or one of the other academic referencing programs

i. Keep a bibliography from the very start – as above, Endnote or Zotero could manage this for you, but equally you can keep a bibliography manually. The important thing is you need to remember to do this from day one of your project and not miss anything out

You can download a printable copy of this list here.

What should be included in your research folder?

a. All research information and data gathered (ideally with an indication of the date gathered)

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i. Keep a bibliography from the very start – as above, Endnote or Zotero could manage this for you, but equally you can keep a bibliography manually. The important thing is you need to remember to do this from day one of your project and not miss anything out

Tip: Getting the most out of your research folder: As you will have noticed in the list above, a research folder not only helps you physically manage and handle your data, it is also vital that you use it to record your thoughts through the research journey. What this means is that analysis starts at the beginning of your project and does not stop until you have handed in your project. Recording your changing thoughts about your arguments, theories and analysis will make writing it all up in a research report so much easier.

Tip: Getting the most out of your research folder: As you will have noticed in the list above, a research folder not only helps you physically manage and handle your data, it is also vital that you use it to record your thoughts through the research journey. What this means is that analysis starts at the beginning of your project and does not stop until you have handed in your project. Recording your changing thoughts about your arguments, theories and analysis will make writing it all up in a research report so much easier.

The Cambridge Research Log

In addition to your research folder you will need to keep a Research Log as a formal part of your project which will be submitted for assessment in addition to your report. The log must be included as an electronic appendix and cross referenced as necessary within the main body of your report. It will not form part of your 5000 word limit and should not be used as a means of extending that limit. Its purpose is to provide supporting evidence of your research skills and of how they developed throughout the project as well as showing how your research progressed the way it did.

At first glance the Research Log appears to be another version of your research folder, and some of the contents will be the same; but there are important differences. It may be helpful for you to think of your research folder as a complete record of your research, whereas your Research Log will be a record about your research. It is a development of the reflective paper that you created as part of your Team Project – there you used the reflective cycle to evaluate your progress in working as a group. In your Research Log you should use the same reflective cycle to evaluate your own research process. As you do this you will find your Research Log developing into a powerful tool which helps you to become more effective in your research.

In comparison with your research folder, your Research Log will be quite brief. It should help you to plan, monitor and review your progress and thinking throughout the research process. It does not need to include details of all your actions and ideas, but should include the following:

- Details of your research as you carry it out

  Websites you access and their URLs

  Books/journals/magazines you consult (including full information for creating a bibliography and referencing later)

- Brief notes on the content of each item detailed above, especially the key ideas and arguments

  Include useful quotes (noting carefully where they came from) and comments about the bias/credibility/reliability/authority of the source

  Questions that occur to you either for further research or to ask your tutor

  Ideas about how the research fits into your overall plan

- Preparations for and records of your meetings with your teacher

  Questions for your teacher

  Suggestions made by your teacher

  Ideas about what to do next

- Your reflective thoughts on your research

  Notes/commentary on your use of methods and methodology

  Observations on how your research question may have changed as a result of your research and/or feedback you have received

  Reminders of things you need to check/verify

You can download a printable copy of this list here.

As you maintain and use your Research Log you will find it to be an invaluable support for your research as it develops over time.

Your Research Log should consist of the following types of entry:

- Details of your research as you carry it out
  Websites you access and their URLs
  Books/journals/magazines you consult (including full information for creating a bibliography and referencing later)

- Brief notes on the content of each item detailed above, especially the key ideas and arguments
  Include useful quotes (noting carefully where they came from) and comments about the bias/credibility/reliability/authority of the source
  Questions that occur to you either for further research or to ask your tutor
  Ideas about how the research fits into your overall plan

- Preparations for and records of your tutorials
  Questions for your tutor
  Suggestions made by your tutor
  Ideas about what to do next

- Your reflective thoughts on your research
  Notes/commentary on your use of methods and methodology
  Observations on how your research question may have changed as a result of your research and/or feedback you have received
  Reminders of things you need to check/verify

Handling different types of data – statistical and technical data

A research folder allows you to handle the information you gather and your thoughts about that information efficiently, but there is another data handling consideration you need to think about when designing your research: whether you will have the skills, knowledge and resources to make sense of the kind of data you will gather. This becomes an issue when the kind of data you anticipate collecting will be statistical, technical, complex or jargon-filled in nature.

Statistical data can often be difficult to make sense of if you are not trained in statistics. If you plan to use or generate complex statistical data then make sure you are prepared and have robust plan in place to store and analyse that data.

Equally some non-statistical data and information can be equally hard to make sense of for other reasons. Each academic discipline has its own technical language that can take some time to understand. So make sure you know a little about the technical language before you elect to draw on research that comes from high-level academic sources in such disciplines. If you misread the information you use because you do not understand the technical language you may find yourself getting confused and making invalid arguments in your report. Make sure you are able to ask to help if you need it.

If you find that your research does include discipline-specific words or phrases you may want to create your own glossary to help you and the other readers of your report understand these terms.

Handling qualitative data

Qualitative data consists of non-numerical information, typically in the form of text, but also including pictures, speech, video and audio materials. Handling qualitative data does not require that you know how to store and manipulate statistics, and so can appear to be a more straightforward proposition. However, qualitative data has its own challenges and you need to have a system ready to deal with it.

Qualitative data is often a large and cumbersome thing to store and retrieve. If you are dealing with lots of quotes, transcripts and notes from your readings, the sheer quantity of material soon mounts up and it becomes hard to track. That's why it is vital that you develop a system that allows you to name and label all of the materials that you capture so you can find them quickly again whenever you need to. You need to be able to apply your names and labels – researchers call these 'codes' – as you collect your data. If you leave it to a later time to go back and 'code' you will find it a challenge.

Using codes and indexes: Coding your data simply means coming up with your own system for labelling the information you have so that you can store it – and later analyse it – in groups of content that are about the same thing. What you need to do is devise your own system of letters, numbers (or even colours) that you know refer to different parts of your research.

We have looked at the personal and practical considerations that inform the development of your research design. We have also shown you how to make every aspect of your research journey a more effective one by putting in place good habits of storing and handling your data. We shall now look at one of the more 'methodological' aspects of research design.

> **Tip: Coding helps analysis and writing up.** By coding the data and information that you handle you are actually starting to analyse it. This is because the process of sorting your data into groups and themes involves you thinking about, and making choices about, how each bit of information relates to other parts. This is one of the ways that you will find yourself doing analysis from the start of your project, and so having a good system of coding in place from the start will make the process of analysing your data at the end much more painless. Moreover, your codes can easily become some of the section headers of your final report, so by getting this right you will be making it easier to write up your project.

Desk research is the inter-related process of doing a literature search and a literature review.

Learning Objectives:

In this section you will learn about:

- primary and secondary research
- how to conduct a literature search
- carrying out a literature review

In this stage we shall look at the inter-related process of doing a **literature search** and a **literature review**. Searching and reviewing the literature are different, but as the internet becomes ever more prominent as a research tool, and as more materials are published online, it is getting harder to separate searching from reviewing. The term 'desk research' has taken hold in the research community to describe these two related processes and it has increasingly become an established method in its own right. Indeed, it would be completely valid for your own research design to consist solely of desk research if you have access to a large-enough quantity of high-quality, rigorous, online and paper resources to answer your research question.

As we shall see, desk research is used to refer to all the 'secondary research' activities that are involved in gathering what researchers call '**secondary data**' or '**secondary sources**'.

Primary vs secondary research

'**Primary research**', tends to mean that a researcher is using methods that will generate brand new data, such as questionnaires, interviews or experiments. The methods used in primary research produce '**primary data**'.

In contrast, desk research - the combined methods of literature search and literature review - is basically a form of '**secondary research**'. Put simply, 'secondary research' normally means that you the researcher will be accessing materials that that have been produced by other authors and researchers on your topic, such as books, journal articles, blogs, reports and conference papers. In secondary research you are looking at '**secondary data**' or '**secondary sources**'.

The following activity will help you become more familiar with identifying primary and secondary research methods and sources:

This activity is designed to help you identify which methods of research are **primary** and which are **secondary**.

Read each statement and then choose whether you think it is describing primary research or secondary research.

Proceed

Once you are comfortable with the concepts of primary and secondary research and sources we can explore the secondary research method of the literature search in depth.

Stage 4. Desk Research: identifying, searching and reviewing the literature

The literature search

The literature search is the first component of the research design approach known as 'desk research'. It is a process whereby we seek to identify, locate and evaluate the available existing materials on any given topic. Conducting a thorough literature search is an essential component of the research design process. Knowing what sources and materials you can draw on in your research will help you to decide whether or not you need to do any extra research to generate data for yourself or not.

The primary purpose of your literature search is for you to **construct your reading list**. By the end of your literature search you should know what materials you have available to you, and know how and when you are going to access and read those materials. You will need to make a careful note of all of the items on your list in your research folder, and it's a good idea to record all of these in the form of a bibliography so you have all of the relevant reference and citation information at your fingertips.

The goals of your literature search
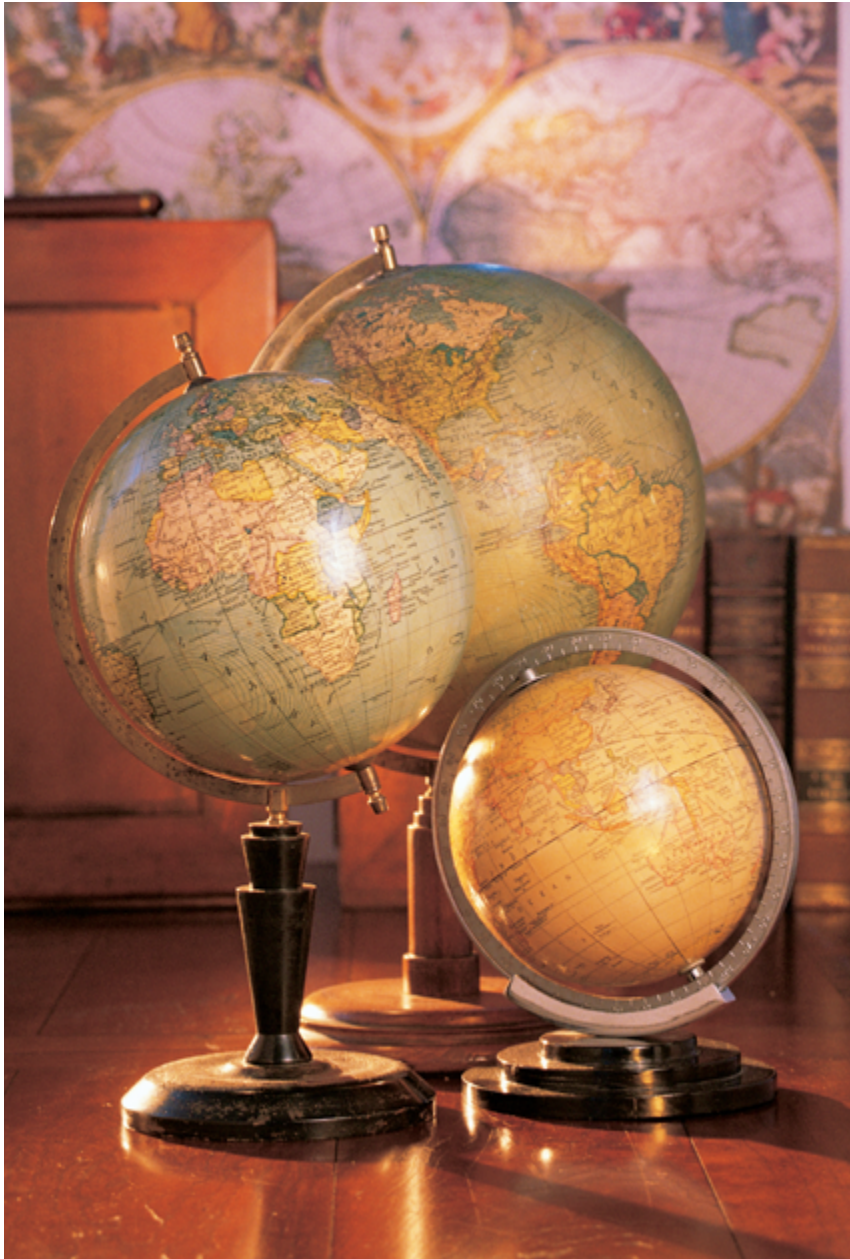
In doing a literature search you are already wading deep into the process of being a researcher. A good literature search helps with a number of key elements of effective research design. Specifically, it will:

- Help you identify and refine your topic and your question

- Inform your research design

- Help you understand more about research methods and methodology

- Provide factual and background information about your topic

- Provide data about topic

- Give you a perspective, argument or theory about your topic

- Give you alternative perspectives and arguments

- Help you identify and locate other readings and sources

- Help to inform your theory

- Help you make sense of your data and analyse it

- Help you write up your final research report

> **Remember:** Doing a literature search and constructing a reading list is not limited to textual material. Sources of data and statistical material can, and if appropriate, should be included in your literature search and on your reading list.

Doing a literature search well requires skill and judgement. It is not simply a process of making a list of the first twenty items that come up in a Google search or in a library search. You need to use critical skills to evaluate better sources from less reliable sources and you need to consider how each potential source might answer some aspect of your research question.

Functions of a literature search

There are a number of functions of doing a literature search that you will need to consider to do one successfully, and these are vital ingredients to effective research design. By following the guidelines given in the next activity you will also start to see how the process of doing a literature search is one that already takes you a long way through your research journey.

> **Remember:** You probably will not succeed in tracking down and reading all of the items in your reading list, so don't forget to remove those items you did not consult from your final bibliography in your research report.

Here is what you should be looking to achieve in doing your literature search:

You can also download the full text of this activity for your reference throughout your literature search process.
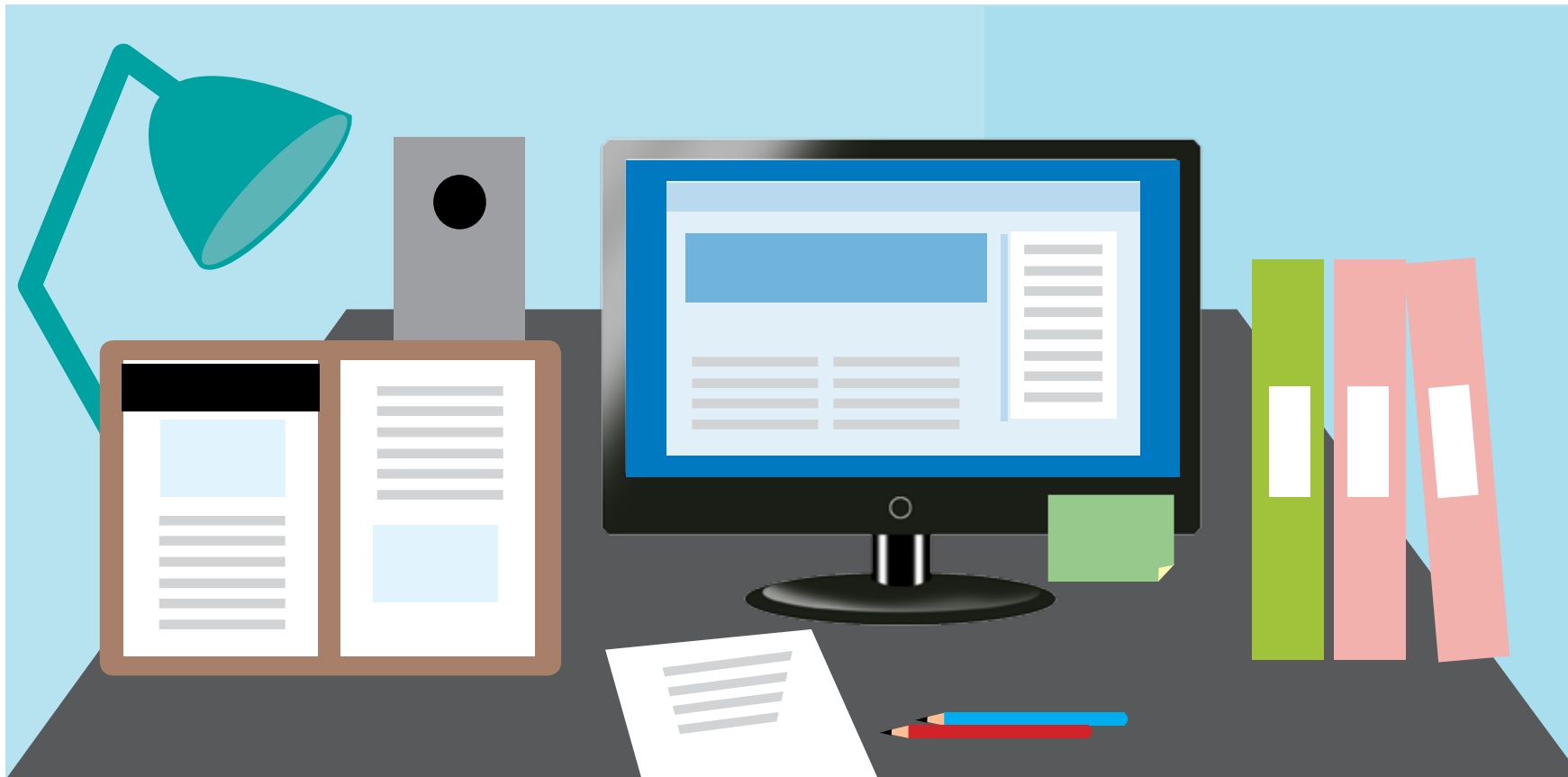
Different techniques of a literature search

Let's now look at the actual mechanics of identifying your literature and working out where and how you can access it. The best way to approach your literature search is to make sure that you do not rely on any single search engine or catalogue, but that you instead minimise the risk that you will miss something out by running the same searches in different locations.

The first thing you need to do is to identify the best words or phrases to search by. By doing this you are identifying your **keywords**. The most obvious keywords will already be present in your research question, but you will need to use your imagination and intelligence to keep expanding and refining your keywords list.

> **Tip: Editing and adding to your keywords list**: You should never think that your first list of keywords is a final and fixed list. Your keywords list should be something that you add to all the time as you dig more heavily into your topic. Each new piece that you read could suggest new keywords to search for additional literature that you may not have initially thought of.

Doing the actual search

Most researchers, if they have good enough access to the internet, will start to search for their literature using internet search tools.

Internet searches: Most people start with Google, and this can generate a lot of results – often a number of results. This will help you scope what is out there on the open web, but it still means that you have to do a lot of work yourself evaluating the good search results from the less good. For many questions, it may be better to do a Google Scholar search rather than using Google's main search engine. Google Scholar will limit its searches to more academic sources only.

It is also a good idea to try the same searches using different search engines. Each web browser operates in a different way and will bring up different results, so try using Bing, DuckDuckGo, Baidu, Yahoo and Ask to search for the same keywords.

Just searching the open web is likely to pose as many problems as it solves however. Not only will open web searches generate many more results than

you can handle, it also generates the kinds of results that may not be the best for your research question. Search engines are programmed to discover web pages, and so it's likely that your search engine search results will contain too many web pages (of varying value to you) and not enough book, journal and report results.

> **Tip: Using search filters to improve your web search results**: To do this on Google, simply enter your keyword or search term in speech marks and add the word 'site', a colon and a suffix that will limit the search to a certain set of domains. For instance, if we wanted to search for material on Scottish devolution and you only wanted to get results from British academic websites you would put the following into Google: "**Scottish devolution**" site:ac.uk
>
> This is a particularly useful method for getting good quality 'grey literature' that may well be open access.
>
> British universities all use the suffix 'ac.uk'. US universities use the suffix '.edu', Canadian universities use '.edu.ca' and Australian universities use '.edu.au'

Moving beyond open-web searches: It is essential that you do not rely solely on open web searches to support your literature search. Not only do such searches not always allow us to locate the best academic materials, but your teachers and examiners will know this and will want to see what other methods you have used to search the literature.

There is a combination of online and offline methods that you should use to bolster your search:

- **Web of Science:** The Web of Science is a search engine that allows you to use filters to access a vast catalogue of published academic peer-reviewed journals. If your school subscribes to Web of Science it is imperative that you use it, as it is the best way of discovering high quality, up-to-date academic journal content from all the main academic publishers. However, there is a paywall that prevents open access to the Web of Science and so you may need to use other methods to access journal search results if you do not have access. You can access the Web of Science at http://wok.mimas.ac.uk

Different techniques of a literature search *continued*

- **Publishers' websites**: The Web of science aggregates journal information from all of the main publishers, but if you do not have access to it you will be forced to go directly to the main publishers' own websites to get a full list of journal and book publications. This will also give you access to any open access publications that each publisher produces.

- **WorldCat:** WorldCat.org is the world's largest academic library catalogue and is therefore a great way of identifying a vast range of academic publications including textbooks, monographs, journals and reports. The WorldCat draws on the collections of a large number of top US university libraries. While you can use WorldCat to identify the titles of publications you want to read, it is unlikely that you will have access to the publications themselves, but this is still a great way of building a wish list of the main literature you would ideally like to consult.

- **Library catalogues:** If your school has a good library it is vital that one of your starting points is your own school library catalogue. If you are lucky enough there could be many publications available in print or online accessible in the library. There are also other university catalogues that you can search online for free. Again, this won't give you access to the books and journals themselves, but it will tell you what might be out there. A particularly good one is the Cambridge University Library: http://www.lib.cam.ac.uk

- **Using indexes, references and bibliographies**: Once you have identified the first few publications you are going to read you can start to look in those publications for further readings. Every book, journal and report you will read should itself contain references and a bibliography, and if these books, chapters and articles are written by experts it is likely that they have the must-read publications in their reference lists and bibliographies. In this way you will be able to identify the most important materials that you will need to find to build up your literature search.

- **Using blogs and Twitter**: Another way of locating good publications to read is to identify the leading authors on a topic and see if they have blog posts or Twitter feeds and to look to see what publications and authors they mention in those blogs and Twitter feeds. This is not an exhaustive method, but it is good for locating up-to-the-minute materials or open access publications that would otherwise have been off your radar.
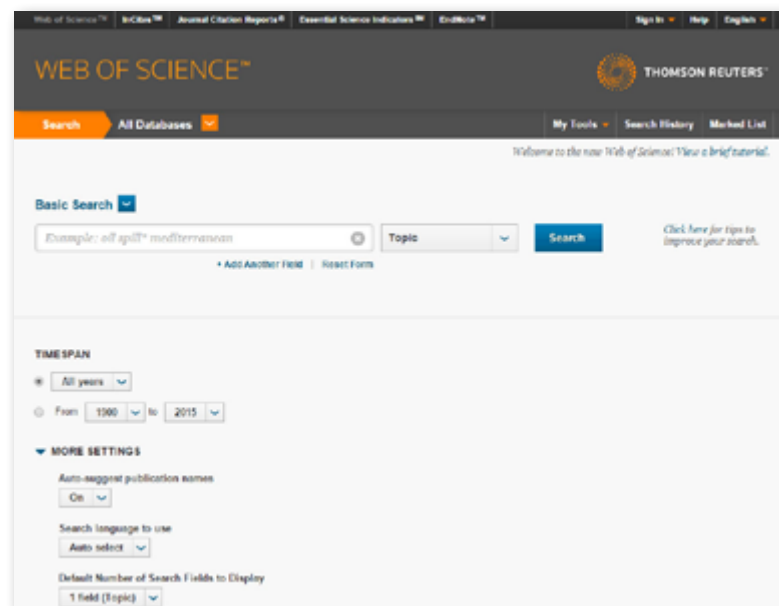
What to look for in your literature search – types of publication

One of the main critical challenges facing you in doing your research report is ensuring that the published materials that you read in support of your research report are of a high academic quality and are from reputable sources. The internet is notoriously filled with lots of very bad quality material alongside its many really useful resources. You will need to use your own judgement to evaluate the quality of each source and each publication.

You need to exclude from your literature search any publications that you think may not be founded in real evidence, but is opinion only. Often it will be obvious when something is propaganda, malicious or not evidence-based, but many internet sites are cleverly designed to be convincing and can only be dismissed after careful examination.

The best types of publication to support you and your research project are those that are **evidence based**. Evidence-based publications are those whose contents and arguments are warranted through reference to valid sources of evidence such as research data and original sources.

Evidence-based publications

The most reliable source of evidence-based information is the **peer-reviewed** publications of academic publishers. Such publications include **academic journals**, **monographs**, **textbooks** and reference publications such as **encyclopedia** and **dictionaries**. All of these types of publication will be peer reviewed if they are published by reputable academic publishers and are therefore much less likely to contain unsupported opinion or propaganda.

It would take too long to list every reputable academic publisher here (for instance there are hundreds of university presses around the world) but here is a list with hyperlinks of the larger academic publishers in English that you are most likely to encounter and whose published materials nearly always tend to be peer reviewed:

- Elsevier
- Wolters-Kluwer
- Pearson
- Cengage
- Cambridge University Press
- Oxford University Press

- Palgrave Macmillan
- Wiley-Blackwell
- SAGE Publications
- McGraw Hill
- Nature
- Taylor & Francis / Routledge
- Harcourt
- Ashgate
- PLoS

If you are in doubt about how reputable a publisher is, take a moment to look at the publisher's website to check its reviewing policy.

Increasingly, many academic publishers will be publishing open access (OA) materials – particularly open access journals - as well as publications that you need to buy to gain access. Open-access journals are free for anyone to read online and could be a good source of up-to-date peer-reviewed content for you.

Remember: Just because something is published by a peer-reviewing reputable academic journal, it does not necessarily mean that it is neutral and objective: Even the very best of researchers bring their own biases to work. It is impossible not to. Such biases could be political, and could sneak into their conclusions and analysis either consciously or unconsciously, or they could be cultural or historical. We are all the products of our times and the place where we live, and this will impact on what we take to be true about the world. For instance, when Isaac Newton was devising the laws of physics he simply did not have access to any of the 20th century progressions that led to the development of quantum physics, and so his work is 'partial' because it did not conceive of such developments. Indeed, even the most committed scientists bring personal standpoints to their work even when they are committed to scientific rigour. As an example, Niels Bohr and Albert Einstein argued throughout their lives about whose model of physics was the best.

Finding other high-quality materials in your literature search

In the days before the internet it would have been possible here to write about the distinction between 'published' and 'unpublished' materials. Increasingly however the internet has changed and significantly broadened what might be categorised as 'published'. A tweet on twitter, for instance, an image on Instagram, and a message on Facebook are all now 'published' online, but of course we should not think that such 'publications' carry the same weight and authority as a peer-reviewed book published by a university press.

Unless you are unusually expert at identifying the few rare gems of good-quality content amongst the many tens of thousands of tweets, pictures and other social media posts that are published online every minute, you would be best advised to avoid such sources of information when doing your desk research. But there are still some good sources of information that you should think about including in your literature search that do not fall into the category of traditional peer-reviewed academic content:

Newspapers: when treated carefully, newspapers can be a good source of information. Be aware that every newspaper, and every journalist, have their own personal standpoint. Some tend toward the 'right' of centre politically, and some tend toward the 'left'. But if you can bear this in mind, and if you can, better still, identify the particular ideological line being taken in an article, the more reputable 'broadsheet' newspapers are often a good source of up-to-date reporting on a wide range of issues, and can be much more current than slower-to-publish academic materials.

The Conversation: An interesting new development you could look at is The Conversation. This is a kind of newspaper, published online every day, but written by academic expert researchers rather than by journalists. The articles published in The Conversation are not peer-reviewed, so you need to be a little careful, but each author is a proven academic expert on the topic of the article.
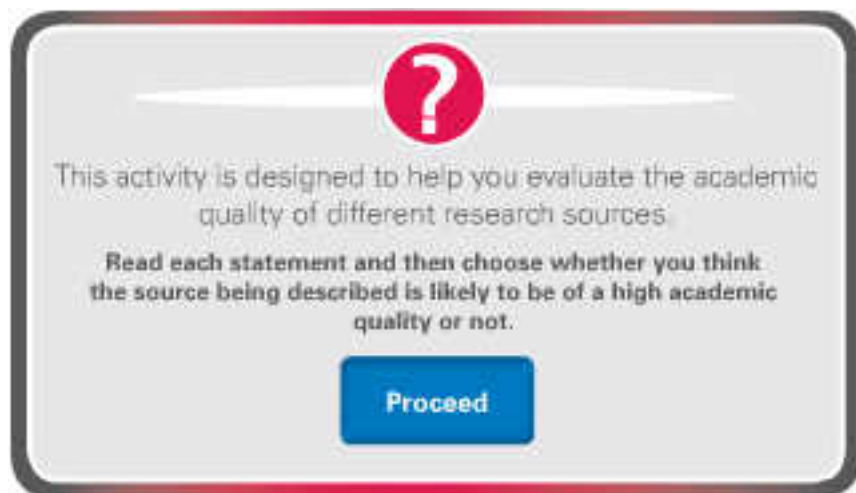
Grey literature: 'Grey literature' is another good source of often open access content, often (but not always) written by legitimate academic researchers and experts. Grey literature consists of non-peer-reviewed content posted online by legitimate academics and research organisations and other organisations such as NGOs and businesses. Types of grey literature include:

- Research reports
- Business reports
- Conference papers
- Conference posters
- Strategy documents

Blogs and social networking: We've already seen that taking materials from blogs and social networking sites such as Facebook and Twitter is not normally a good idea. However, it may still be a good idea, when you have identified the names of noted academic experts on a topic, to check to see if they publish blogs, keep Facebook pages or have a twitter feed, as these could connect you to other accessible and legitimate sources of information. Indeed, some academic blogs are good sources of information in and of themselves.

Finding other high-quality materials in your literature search *continued*

To ensure you are clear about the quality of sources you should be looking for and using in your report, try the following activity using some of the same scenarios that we used for identifying primary and secondary research:

This activity is designed to help you evaluate the academic quality of different research sources

Read each statement and then choose whether you think the source being described is likely to be of a high academic quality or not.

Proceed

Remember that although a publication may not have traditionally peer-reviewed academic content it may still be of value to your research if it leads you to a better source, or if you can show that the information it contains comes from a reputable source.

Tip: Dealing with subscription access barriers: One problem you are likely to encounter is that a lot of academic content is impossible for you to access online because it is password protected. Academic publishers charge schools and colleges subscription fees to access the material, and while most universities pay such fees, most schools do not. You can still access and read the abstract, and that will help a bit by summarising an article's argument, but it is not as useful as reading the whole article. One way of mitigating this 'access control' problem is to identify the article's author and to see whether that author – who is likely to be a credible academic scholar – has written alternative open access reports, blogs and conference papers that you can access. Such authors may even have twitter or other social media feeds that also link to related information. As it has been shared by a serious academic this information is likely to be of more value to you than material you locate yourself on the open web.

The literature review

The second component of doing desk research is the literature review. We have seen how the literature search allows you to identify and locate all the publications you need to start answering your research question. But now you need to read, critique and analyse those materials, which is the process known as the literature review. This process of selection, reading, critiquing and evaluation is, in practice, inseparable from the process of literature searching; hence the term 'desk research' which makes clear the close relationship between these two processes.

It is important to note, as we have done a few times already, that the different components of your research design do not occur in neat and tidy stages one after the other. This observation applies as much to the literature review as to any other aspect of research design. It is likely therefore that the process of reviewing your literature is likely to start from the beginning of your research project; that it will be used to inform your choice of topic and the phrasing of your question; that reviewing your literature helps you refine your search for more literature; and that you will need to keep on reading, critiquing and re-reading your materials right up to, and during, the time when you write up your research report. In short, reviewing the literature is something that you will be doing from the first to the final day of your research project.

'Reviewing the literature' vs 'The Literature Review'

It would be useful at this point to tidy up an issue that is often confusing for new researchers. When we talk about 'the literature review' we are in fact talking about two overlapping things. First, the literature review refers to how we go about reading, critiquing, reflecting upon and making notes about the materials we read. Secondly, the Literature Review, with capital letters, is also the name that researchers give to the specific section or chapter in a research report that summarises, contextualises and critiques the secondary literature and secondary data that the researcher looked at to inform their study.

You may want to include a Literature Review section in your own research report, but please be aware that it will only really make sense to do so if your report also includes significant amounts of primary research and primary data. If you are relying on desk research alone to support your research report – and therefore on secondary sources alone – your entire research report will effectively be a Literature Review, and in this cases it would be meaningless to include a section in your report titled 'The Literature Review'.

Reviewing the literature: How to evaluate materials in your literature review

Reviewing the literature is likely to form a critical part of your research report. Being able to critique and contextualise the materials you read, to put them into a logical order, and to identify biases, perspectives, gaps in coverage and strengths and weaknesses in their arguments are all core critical thinking skills that you will need to use to produce a high quality research report.

Once you embark on the process of reading the materials you have found you will need to be able to deploy the skills and attributes you started to work on in the AS part of your course, and particularly in the Critical Path, to good effect.

We call the process by which we read and critique the existing literature 'evaluation'. To 'evaluate' is to allocate a value to something, and that means that you are in a process of judging, calculating and interpreting the importance, quality and amount of information or data you are looking at.

We can evaluate the materials we read in many ways, but in the following activity we give you some approaches to evaluating your literature to get you started:

Reviewing the literature: How to evaluate materials in your literature review *continued*

You can also download the full text of this activity for your reference throughout your literature review process.

To support your reviewing of the literature, you can also look at the materials you read and critique from social and cultural points of view. In that way you will gain further insight into the aims of the author or organization that produced the material and make further sense, critically, of what you read:

Historical: When was the piece written – what difference might that make? But also how is the piece trying to tell the story of history; who is being portrayed as the good or bad guys?

Economic: What are the economic interests of the author(s)? Who might benefit if we all accepted the arguments, assumptions and standpoint of the piece?

Political: What ideological standpoints can you identify in the piece? Do any political groups or parties benefit particularly from the arguments made in the piece?

Scientific: To the best of your knowledge, is good science being used to warrant the arguments made in the piece? Are the research methods used by the author valid and reliable?

Cultural: How has the author's cultural background affected their knowledge and opinions?

Religious: How has the author's religious affiliation affected their knowledge and opinions?

Tip: Who is funding the research? In most countries, if you are an academic researcher based at a university, you have an obligation to declare all sources of research funding and support that may affect your affiliations and thereby cause a potential conflict of interest. Sometimes academics allege that the funder of a research project can have an undue influence on the findings and publications. So if you are interested in how a research publication that you have read may have been influenced in some way, check out where the funding came from!

Your own interpretation of the literature you review is the important thing. Alongside the different aspects of reviewing that we have listed above you will also need to come up with areas of your own, based on your own understanding of what is significant in answering your research question.

As you make notes on what you read in your research folder, you should also reflect on your feelings about each piece. Make a note of how it might have changed your thinking and whether or not you agree with what you are reading.

Having looked in depth at desk research, you are now ready to move on to the next stage where we will address the thorny problem of Selecting your methods.

Stage 5. Selecting your methods

You have the freedom to select the research methods that work best for you in answering your question.

Learning Objectives:

In this section you will learn about:

- Deciding on how much, if any primary research you should carry out
- Choosing the appropriate primary research methods
- Methodology and methodological thinking, including the concepts of validity and reliability

The next stage in devising your research design is one of the hardest of them all: how to select the specific research methods you will use to gather your data.

You should be reassured that you should select the methods that work best for you in answering your question. As long as you can justify and defend your research choices, and if you can reflect upon them and write about them effectively in your research report, you are going a long way towards becoming an effective researcher and satisfying the requirements of the course.

What follows here should be regarded as brief exploration of some of the issues you will need to weigh up for yourself when choosing your methods.

Stage 5. Selecting your methods

Method Selection

Your choice of methods will be dependent on the practical and personal factors discussed in Stage 4; on factors such as how much access you have to a good library and online materials, how much ability you have to use statistical methods or handle lots of textual material, or whether you feel comfortable interviewing friends, relations or strangers.

Other methods will suggest themselves as you start doing your desk research or when you are midway through this process. The literature search will highlight the range of materials you need to read and have access to, and by implication will suggest where you need to fill the gaps left by what is not available to you. Your literature review will also play the same role; as you start to read and critique your sources and your data you will start to get a feeling of where you have sufficient information already and where you need to find more.

What information do I need to answer my question?	
Where will I find it?	
Does this information illuminate all of the perspectives and aspect of the topic that I need to dig in to my topic really thoroughly?	
Is desk research enough?	
What gaps highlighted by my literature search will need filling?	
What issues highlighted by my literature review need further probing?	
Has the literature review highlighted biases that need to be countered by looking elsewhere for information?	
Is the answer more desk research?	
Do I need to conduct primary research?	
Would primary research add extra value and insight to my research?	
What methods of primary research do I have the skills to handle?	
What forms of data analysis will I need to use to make sense of the data I will generate?	

You can also download the list if you wish to refer to it when you are carrying out your desk research

Once you have worked your way through these questions you should be well placed to understand the choices you have to make about method selection. You should now be able to see that you have a choice of utilising existing research materials (desk research or 'secondary research') or conducting your own research (primary research) of one kind or another. It is also quite reasonable to think about using a combination of desk research and primary research. Successful reports can use any combination of research, so there is no additional benefit in choosing primary research over secondary or a mix of different methods.

Stage 5. Selecting your methods

Answering your research question: what methods do this best?

The first, and hopefully most obvious, thing you need to do when developing a valid research design is carefully to consider how you will best answer your research question. Your question, as we have seen, should have a logic to it that dictates the adoption of some methods of research over others. Ideally you have made sure that the logic of your question takes you in the direction of doing research that you are able and resourced to do (if you're uncomfortable with doing statistics, for instance, you ought not pose a question that implies lots of statistics and work with complex equations).

Quantitative questions: If your question asks 'how much?' or 'how often?' then you will need to include in your design a way of getting and making sense of numerical information. Numerical information, also better known as 'statistics' or 'quantitative data', requires that you access and interpret material that is derived from quantitative research.

You can access statistical material using desk research by drawing on existing data available and published in other studies. While you will not have to use quantitative methods to generate this data you will need to know something about statistics to make sense of this data, to evaluate it, and to deploy it in a valid way in your report.

If you want to generate your own quantitative data, perhaps because you cannot find or access appropriate data in your desk research, you will need to use research methods such as surveys or experiments that generate data in numerical form.

Qualitative questions: Conversely, if your research question requires that you understand people's motivations, their interpretations of issues and events, and their feelings about them, then you will need to use qualitative methods or access qualitative data. You will then need to locate Secondary sources of qualitative research and perhaps do some qualitative research of your own to generate new data and findings.

Many research questions, including the kinds of big global questions that you are being encouraged to ask, probably require a mix of sources and data types to answer them fully, so it may be a good idea not to pre-judge too much whether you need quantitative or qualitative materials. Keep an open mind and look at getting as much relevant information of all kinds as possible.

Stage 5. Selecting your methods

Selecting your primary research methods

Desk research is a must: Whatever else you decide to include or not include in your final research design, you have no choice but to do a good deal of desk research. Searching and reviewing the literature, as we have seen already, are vital and unavoidable components for any research study, and particularly those conducted by new researchers such as you. If you want to introduce yourself to a new topic and get to understand the many different aspects and sides to that topic then you need to search the literature and establish what other, more experienced, researchers have said about the topic. Bear in mind also that even those established single-method specialist researchers out there still have to keep abreast of the latest research in their field and have to refer to the established and emerging literature in all of their publications. One cannot publish a research article, a monograph or a research report without a significant Literature Review section that draws on a wide range of available sources and contextualises the relevant debates and controversies.

That means the **main question facing you is really how much you should rely on desk research and how much should you rely on other methods?** For many of you, if resources permit, and if your research question permits, it could be that desk research forms one hundred per cent of your approach and that, as a consequence, you rely solely on secondary research data and materials. Such a strategy is perfectly permissible and legitimate, and for the kinds of research topics that are situated in a global context it may be the best approach for a brand new researcher.

You probably cannot make such a decision early on in your research journey, and one of the primary purposes of your initial literature search is to help you come to a decision about **whether the range and quality of secondary materials and data that you will have access to is sufficient to support your entire research report.**

Why would/should you consider primary research?

You should consider doing primary research if a number of the following considerations apply to you:

	YES	NO
Your desk research reveals gaps in your/our knowledge of your topic that can be only filled by additional research?	☐	☐
You consider that significant additional value, insight and information can be gained?	☐	☐
You have reason to believe that primary research may tell you something significantly different to, or better than, what the desk research is telling you?	☐	☐
Your access to good sources of literature is limited and you need to seek alternative ways of getting data?	☐	☐
You have the time and material resources that will allow you to plan, conduct and make sense of lots of additional data?	☐	☐
Your topic or your question demands original research data?	☐	☐
You have the skills necessary to have a go at using some of the primary research methods for yourself?	☐	☐
You have access to the appropriate people or data sources to allow you to conduct primary research?	☐	☐
You have access to the technical equipment or software necessary to gather, store and analyse your data?	☐	☐

Selecting your primary research methods *continued*

Is primary research always appropriate?

Doing primary research could be the right thing to do for some people and the wrong thing to do for others. Here are some reasons why you might want to consider NOT doing primary research:

1 Doing primary research is nearly always much more difficult than you think

2 It always takes longer than you think to successfully plan, carry out, and analyse the research. Much longer!

3 If you don't know what you're doing, you can end up asking the wrong questions, gathering poor data and making your report worse than it would have otherwise been

4 You can end up with significantly large amounts of data that needs storing and analysing, and you may not be prepared for this

5 Selecting the wrong method, even if you are a good researcher, can also be more hindrance than help

6 Certain methods will require money and resources that you may not have at your disposal

Tip: **Think carefully and discuss with your teacher before deciding to do primary research yourself.**

Stage 5. Selecting your methods

Weighing up the advantages and disadvantages of each method

There are three methods of gathering primary research that you are most likely to consider using – surveys, interviews and focus groups - and then think about the pros and cons of each method. By doing this you will be better informed of which method, if any, is best for you. We'll then go into more detail on what each of these three methods consists of in the next stage.

?

Survey research – sometimes called 'questionnaire research' – is a popular method across a range of academic and commercial fields. It is seen, wrongly, as an easy method to use.

Use the buttons to identify the Pros and Cons of Survey Research listed.

Proceed

Weighing up the advantages and disadvantages of each method *continued*

Interviews can take many forms. Structured interviews are effectively one-to-one surveys conducted in-person, online or on the phone. Other forms of 'qualitative interview' are much more exploratory and open ended and can take a long time to conduct.

Use the buttons to identify the Pros and Cons of Interviews listed.

Proceed

Surveys

Survey research – sometimes called 'questionnaire research' – is a popular method across a range of academic and commercial fields. It is seen, wrongly, as an easy method to use.

Use these labels to identify the Pros and Cons of Survey Research listed below:
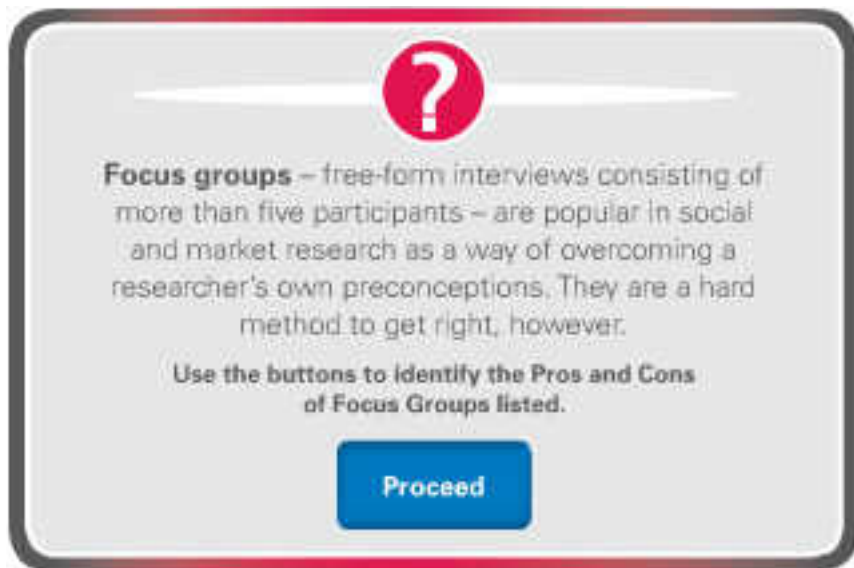
- Use to collect information from or about people to describe, compare, or explain their knowledge, attitudes, and behavior
- Developing well written and unambiguous questions can be difficult
- Results can be superficial if your questions are not really well phrased
- Can generate quantitative and qualitative data
- Can be expensive
- Easy to tabulate and compare responses with one another
- Can get a large number of responses relatively quickly
- Reported behaviour/attitudes do not necessarily match actual behaviour/attitudes
- Difficult to determine cause and effect
- Need to determine your questions early and they may turn out to be the wrong questions!
- With the right 'sample', responses can be representative of a population
- Survey fatigue – people are tired now of completing surveys and can either rush them or say anything just to get them out of the way. Alternatively lots of people – most people – say no when asked to complete them.

Consider using survey methods if you want to count and compare your results.

Weighing up the advantages and disadvantages of each method *continued*

Focus groups – free-form interviews consisting of more than five participants – are popular in social and market research as a way of overcoming a researcher's own preconceptions. They are a hard method to get right, however.

Use the buttons to identify the Pros and Cons of Focus Groups listed.

Proceed

Surveys

Survey research – sometimes called 'questionnaire research' – is a popular method across a range of academic and commercial fields. It is seen, often wrongly, as an easy method to use.

Interviews

Interviews can take many forms. Structured interviews are effectively one-to-one surveys conducted in-person, online or on the phone. Other forms of 'qualitative interview' are much more exploratory and open ended and can take a long time to conduct.

Focus Groups

Focus groups – free-form interviews consisting of more than five participants – are popular in social and market research as a way of overcoming a researcher's own preconceptions. They are a hard method to get right, however.

Stage 5. Selecting your methods

Thinking about 'methodology' and research design

We could summarise a number of the aims of the Cambridge Research Report simply by stating that a core goal is to get you to demonstrate that you can think 'methodologically'. The term 'methodology' refers to the way researchers think about and reflect upon the process of doing research. In many ways, 'methodology' refers to how we theorise about our research design. Understanding the theory behind your research decisions is one of the criteria that you will be assessed on after you submit your research report, so knowing something about research methodology is important.

Sometimes the word methodology is used incorrectly to refer to an actual method of researching. You may hear, for instance, people talk of using 'focus group methodology', when really they were using the focus group method. To be really pedantic about it, 'methodology' is the 'ology' of doing research; the way we think about issues of research; the way we theorise about doing research and justify our decisions as researchers. 'Methods', on the other hand, are the specific research activities – doing interviews, observations, questionnaires, etc. – that researchers use to gather data.

With that in mind, when you think about issues of methodology and research design you are thinking about the methods you need to use to answer your research question in the best way and you also need to be aware of the justification for those methods. It is important, however, always to think about the methodological elements of your research project in tandem with the practical and personal considerations we discussed above. For example, methodologically speaking, a 'systematic review' of published data available in online academic sources may be the best way to approach your research question. However, if you do not have easy internet access, or you cannot access academic resources through their password protection, or if your statistical knowledge is not advanced enough to handle the data, then you should not select such an approach. So you always need to consider your abilities and the practical constraints you will face as you plan your research design.

> **Tip: Writing about methodology in your research report.** Words such as 'methodology', 'theory', 'reliability' and 'validity' can seem difficult and intimidating, and it is true that, in the wrong hands, they can be difficult subjects to write well about. However, the important thing is that you simply reflect upon the methods you have used in your report and that you can explain and justify to your reader why you chose to use those methods and what you feel their strengths and weaknesses are in allowing you to answer your question. You're already working well if you can think back and reflect about what you would do differently if you were starting again, and if you can explain in common sense terms why you made the decisions you did.

Stage 5. Selecting your methods

'Valid' and 'reliable' research designs

Perhaps the easiest way of theorising about your research is to think about the concepts of 'validity' and 'reliability'. Knowing a little about these concepts is a good starting point for thinking 'methodologically'.

Validity is best defined as the extent to which any method, data, or evidence actually measures what it is intended to measure. (Validity. (2005). In W. Paul Vogt (Ed.), *Dictionary of Statistics & Methodology*. (3rd ed., p. 336). Thousand Oaks, CA: SAGE Publications, Inc. Validity can be a difficult concept to grasp even for experienced methodologists, but for our purposes the important thing to bear in mind here is that you need to choose the best and most appropriate methods that will generate the kind of evidence that best answers your question.

A good way of explaining validity would be to take a bad example, a case where the methods used are clearly not valid: Let's say that our research question is about the fall of the Roman Empire in the 5th Century AD. Invalid methods might include oral history interviews (because clearly no eyewitnesses have survived since the 5th century) and a survey of your classmates asking them for their opinion (because it is highly unlikely that your friends have meaningful insight and reliable knowledge of the question). Indeed, generally speaking, if your research question is a historical one looking at past events then a whole range of methods almost automatically become invalid: observational research, experimental research, questionnaires etc. because of the absence of living subjects that you can consult.

The other important thing to bear in mind about trying to be valid in research is that it makes us think about seeking 'reliable' evidence. Typically the terms 'validity' and 'reliability' go together. Valid evidence tends to be reliable evidence.

Reliability, in research terms, broadly means that our information – our data – is dependable and repeatable. This means that if another researcher read the same sources as us, or ran the same experiment with the same group, then their results and their interpretations would be broadly similar to ours. (Miller, P. (2008). Reliability. In Lisa M. Given (Ed.), *The Sage Encyclopedia of Qualitative Research Methods*. (pp. 754-755). Thousand Oaks, CA: SAGE Publications, Inc.

So, when we construct our research design it has to be valid – i.e. it has to consist of appropriate methods that answer the question we have posed – and it has to generate reliable evidence, in that our interpretation of our evidence needs to stand up to the scrutiny of others looking at that evidence. Your research reports need to demonstrate that you have applied high levels of validity and reliability in your approach to your research design.

Stage 5. Selecting your methods

Considering the ethics of your research

It is vitally important when you do your research that you do so ethically. Thinking about the research ethics of your research design entails thinking hard about whether your methods

- **promote responsibility** to those you research with and also to yourself
- **promote integrity and honesty** in your dealings with the information you handle, and
- **protect you** and those you research with from potential harm.

The following activity will help you recognise the key considerations of ethical research:

At all times it is your responsibility to demonstrate that ethical issues have been considered and that appropriate steps have been taken to address them. University researchers normally have to get something called 'ethical approval' from a review board before they embark on a large-scale research project. You will not need to do this, but it is a good idea to talk to your teacher about how you can ensure that your approach to your research is ethical throughout. You need to consider how best to ensure that you exercise responsibility, integrity, honesty and protection in your research activities. You will also need to do a little **risk analysis** of what you plan to do.
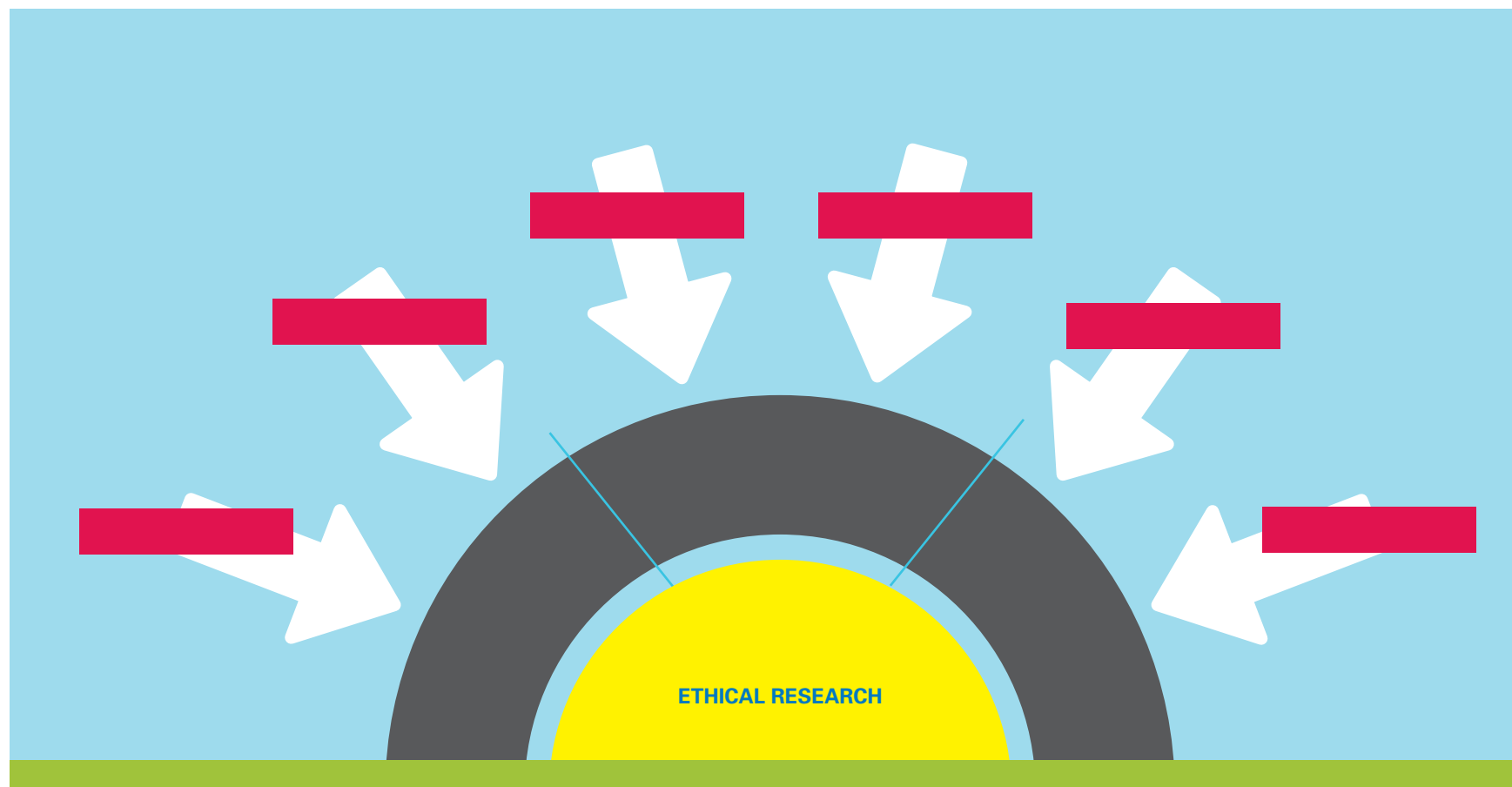
ETHICAL RESEARCH

Considering the ethics of your research *continued*

Stage 5. Selecting your methods

Protection in research: Consider your safety

Most forms of research carry very little risk to the researcher. Doing desk research may bring you into contact with facts and ideas that you do not care for (reading extremist literature can be unnerving and reading materials such as eyewitness accounts of war and genocide can be extremely upsetting) but it does not place you in any physical danger. Similarly, most forms of primary research that you might consider – interviews, focus groups and surveys – should also pose little or no threat to your physical wellbeing.

However, some academic researchers choose research topics that put them in risky situations. Consider the criminologists who research the criminal underworld, or the epidemiologists who research the spread of diseases in the midst of an epidemic or outbreak. But even if your research is not into a 'dangerous' topic such as criminal activity or the spread of disease, there can still be risks, and it is incumbent upon you and your teachers to do some risk analysis to identify and minimise your exposure to any risky situations.

If your answer is yes to ANY of the following questions, then you need to talk to your teacher about modifying your plans to minimise any risk involved:

	YES	NO
Do you plan to talk alone to people you don't know as part of your research?	☐	☐
Will you be travelling alone as part of your research?	☐	☐
Does your research topic or research design include the study of behavior that could be regarded as morally questionable or physically dangerous?	☐	☐
Will you be looking at reading materials containing graphic images and/or graphic descriptions?	☐	☐
Will you be consulting materials that incite hatred or violence?	☐	☐
Will you be reading about, or talking to people about, issues that elicit extreme emotional or even violent responses?	☐	☐
Is there likely to be anything that you will say in your report that may harm another person?	☐	☐
Could there be any legal reasons why you may not read something, access a particular website, or say something in your report?	☐	☐

If there is any aspect of your research design that worries you in any way it is vital that you discuss it with your teacher. Even if you think you are worrying needlessly it is still best to talk it through with your teacher.

Stage 5. Selecting your methods

Consider the risk to those who are part of your research process

So far, we've considered the risks to you the student researcher, but we also need briefly to consider whether there are any risks to those that we are going to research. This may seem like an odd thing to consider, but when we bear in mind that if we ask a person to tell us about significant events in their life that may come at some emotional cost to that person.

Equally, we cannot ask a person to tell us about things for which they could get into trouble in some way - either at work, or with the law, or even with their families – without taking every measure possible to ensure that the information that person provides is confidential and that their identity is protected. It is imperative that in helping us with our research no person comes to any physical, emotional or economic harm.

Even misrepresenting what a person has said or written poses a risk to that person. There is the moral risk involved in attributing thoughts and opinions to a person or organisation that are not held by that person or organisation.

Please be assured that it is highly unlikely that any aspect of your research design poses a material threat to your wellbeing or that of others, but you do need to consider such issues and take appropriate action if you or your teacher has a valid concern.

If, after carefully considering all of the information in this stage you have decided that you will need to conduct some primary research you can explore the three main primary research methods in greater depth in the next stage.

Stage 6. Gathering Primary Data (fieldwork)

Gathering primary data for yourself – sometimes called 'fieldwork' – is a way to obtain entirely new data for your research report.

Learning Objectives:

In this section you will learn about:

- Using surveys / questionnaires
- Carrying out personal interviews
- Organising and running focus groups

In this section we will look briefly at some of the methods open to you to **gather primary data for yourself**. It may be that you will largely, or even entirely, rely on desk research to gather your data through the twin methods of literature search and literature review. Desk research is a very legitimate approach for you to take and is a bona-fide research method in its own right. Remember, desk research can supply you not only with published literature and grey literature, but it can also be a source of secondary data. However, we have already looked at desk research, and so this section starts to look at what additional methods you could use to gather information that does not already exist – what researchers call 'primary data' – to support your research report.

Stage 6. Gathering Primary Data (fieldwork)

Gathering primary data

We have seen how desk research provides us with the methods needed to locate, access and gather not only published materials but also all kinds of secondary data. Our concern here is to start you thinking about what other research methods you may need to use to gather entirely new data to support your research report: 'primary data'. There are a vast number of textbooks, monographs, articles and reference works on gathering primary data, and it is highly advisable that if you do opt to take this approach in your research design that you consult some of this literature first to help you do so in valid and robust way. This learner's guide is no substitute for a proper in-depth introduction to research methods.

There are a large number of methods for gathering data available to researchers, and this guide does not have the time to introduce all of them. Instead, we will look briefly at three of the more accessible, widely used and easy-to-learn methods:

1 Surveys/questionnaires

2 Interviews

3 Focus groups

You may wish to consider using another method, such as designing and setting up your own experiment or doing observational work (sometimes called 'ethnography'). These can be very good methods to use to support your research project, but if you are interested in using such methods you should make sure that you research the method thoroughly first.

Read more: If you are considering gathering primary data yourself it is a good idea to read a proper introductory research methods textbook. These include:

- Bill Kirton, Brilliant Dissertation, Pearson, Harlow, 2011

- Gary Thomas, Doing Research, Palgrave Macmillan, London, 2011

Your teacher may also be able to recommend alternative resources for you to refer to.

Stage 6. Gathering Primary Data (fieldwork)

Using surveys/questionnaires

In research methods, a survey is a research design that uses a questionnaire to gather data. The questionnaire is written list of questions that are normally completed by a person or persons that we are interested in talking to. Sometimes those people are called 'subjects' and sometimes they are 'informants' or 'respondents' (the word 'respondent' referring to the number of people who 'respond' to the survey). It is not uncommon for writers to use the terms 'survey' and 'questionnaire' interchangeably.

Surveys are a great method for gathering relatively large amounts of entirely new data on a subject fairly quickly, and because all of your survey 'respondents' will be responding to the exact same questionnaire, containing the exact same questions, the data that your survey provides will give you lots scope for making comparisons.

You can use a survey to gather both quantitative and qualitative data, and the way to do this is to design your questionnaires in such a way to get the kind of data you need and can handle. Typically questionnaires are made up of two types of question:

Closed questions, where respondents are asked to tick a box or assign a number or value next to a question. Closed questions generate quantitative data.

Open questions (or open-ended questions) where respondents are posed a question which they can answer 'discursively' using words of their own choosing. Open questions typically generate qualitative data.

Remember: If you looking for lots of quantitative – statistical – data, and have used lots of closed questions in your questionnaire, make sure you have thought about how you will handle and analyse this data first so that you feel confident in taking this route.

When thinking about – 'designing' – your survey, you need to weigh up three key considerations: who your respondents will be; what your questions will be; and how you plan to reach your respondents.

Who will your respondents be? Identifying your 'sample'

The process of working out who to send your questionnaire to is called 'sampling'. Your final list of respondents will be called your 'sample'. The goal of sampling is to identify the most appropriate population to participate in your survey. The key thing to consider when 'designing your sample' is whether the people you will ask to complete your questionnaire are the very best, most qualified people to do so.

For example, if research topic was the changing nature of leadership in large business organisations. It would be irrelevant to send your questionnaire to your school friends, relations and teachers because none of them are currently in a position to reflect on what it is like to take a leading role in a large business organisation. Your sample here would be 'invalid', a valid sample would consist of as big a number of people with direct experience of leading a large organisation as possible.

You also need to be practical and realistic in survey design. Unless they are personally known to you, business leaders are most unlikely to respond to a student's request that they fill in a survey anyway, so you would need to think whether you have even picked the best method for your topic given your status and circumstances.

If you are going to use a survey, then, you should be researching a topic that the kinds of people who are likely to agree to participate by filling in your questionnaire will have something to say about.

Coming up with the right questions: Designing your questionnaire

Once you have identified your sample and established whether your sample will be accessible to you and will likely respond positively to your invitation to take part you need to think about your questions. Surveys, like any method, are only really as good as the questions you ask in your questionnaire. So if your questionnaire contains poorly thought out questions, or vague questions that are open to different interpretations, then your survey might have very little use indeed. If that's the case, you could be criticised for asking 'invalid' questions.

Stage 6. Gathering Primary Data (fieldwork)

Using surveys/questionnaires *continued*

Another important point about your questions is that you need to choose their wording very carefully. It is vital for the validity of your research for you to obtain honest answers from your respondents which accurately reflect their thoughts and feelings. However, poorly worded questions may not allow this. 'Leading' questions suggest the answer that is expected and some wording may imply limited options to the respondent. Try the following activity where you are asked to identify the problems with the given questions and then asked to suggest improvements to them:

The following questions are not suitable for use in research questionnaires or surveys. Identify the problem(s) with each one, and then try to find different ways to ask them so that they are more appropriate. Click "Check" when you have finished each one to see our suggestions – you may have thought of other ideas which are equally as valid.

1. What is your opinion on the problem of immigration?

2. Should the government spend more of our taxes in supporting people who don't work?

3. If you were President for a day, how would you improve gun control in our society?

4. Do you believe in science or religion?

5. Why do you think it is important for us to reduce global warming?

6. What is the best way to save the whales?

Stage 6. Gathering Primary Data (fieldwork)

Using surveys/questionnaires *continued*

Good survey questions need to be clear and unambiguous. There should be a logic and coherence to the order of your questions (don't jump around from random topic to random topic) and there should not be so many questions in your questionnaire that your respondents get fed up answering the questions or that you have difficulty handling your data.

The best way to design a good survey is to '**pilot**' a first draft of your questionnaire with some friendly helpers so that you can work out which questions are working well and which are working less well. A pilot is basically a mini version of your survey used as practice to perfect the bigger survey. Ask your helpers to report back on any question that is not clear or that can be interpreted in different ways and then adjust your questions accordingly.

Reaching your respondents

Finally you need to consider how you will get your questionnaire to your intended respondents. Much of this depends on who is in your sample. If a valid sample consists of people who are local to you and known to you then a face-to-face method can be used. However, if your respondents are more widely spread you may wish to conduct a telephone or an internet survey or even to use the post to send your questionnaires through the mail (not forgetting to include a stamped addressed envelope for their return).

Perhaps the best method would be to use a trusted and secure email account to contact respondents and to send the questionnaire electronically. Respondents can then return their questionnaire by email.

How many respondents do I need?

There is no easy answer to the question of how many survey respondents you need to answer your question. It depends in part on your question but also on your ability to handle a large amount of data and make sense of it all. Generally speaking it is safe to say the more respondents you can get, the better, but even that depends. If your research question is 'What is it like to have travelled into space?' then perhaps a sample of one might be sufficient.

Stage 6. Gathering Primary Data (fieldwork)

Interview methods

Some surveys are delivered face-to-face or by telephone, and when that happens the researcher is in fact interviewing his or her respondents. Researchers call this kind of interview the '**structured interview**', because the interview is structured around the questions listed in the questionnaire. The researcher – in this case 'the interviewer' – then has the job of asking each question exactly as it is phrased in the questionnaire and faithfully and fully writing down the respondent's answers.

Structured interviews are not the most widely used form of interviewing. Survey researchers now tend to use the internet or email to reach more respondents quickly and cheaply, and researchers specialising in interview methods tend to use the opportunity of meeting and talking with their respondents (we can now also call them '**interviewees**') to ask lots of other questions now that the opportunity has arisen to do so. The thinking here is that it takes time and effort to arrange a face-to-face interview, so why not get more out of that encounter than would be the case if we just used a questionnaire.

Most interview research these days tends to either be '**semi structured**' or '**unstructured**' interviewing. We sometimes call unstructured interviewing '**qualitative interviewing**', because it only generates qualitative data.

Semi-structured interviews usually contain a mix of standardised, pre-decided questions (that are normally asked to all interviewees) and questions that can be ad-libbed or improvised by the interviewer as new thoughts occur during the interview. Semi-structured interviews contain enough standardised questions to allow some comparison of different interviewee's answers, but also give enough room for the interviewer to respond on the spot to interesting things that come up during the interview or to issues that interviewer had not thought of before.

Semi-structured interviews are therefore a good method to use if you are new to interview research, because the pre-set questions can be used to get you started in the interview and provide a spine to hang the whole interview around, but there is enough space for improvisation for you to develop your thinking and ask new questions as they occur.

Unstructured interviews are generally characterised as having no script at all, but it would be wrong to assume that they are completely improvised. Interviewers using an unstructured approach will still have jotted down a set of questions they want to ask or points that they want to raise, but the order and exact phrasing of the questions will be decided within the context of the interview itself, and there will be even more room to ask new questions that arise in response to unexpected and interesting things that the interviewee says.

Two of the more common types of unstructured interview are **oral history interviews** and **life history interviews**. In a life history interview (sometimes called 'biographical interview') the interviewer simply asks the interviewee to tell the story of their life. This normally means the interviewee can choose when and where to begin their story and can dictate what issues and events are covered. In an oral history interview, the researcher normally takes a more active role and is more likely to ask pre-set questions about the interviewee's experiences and these are more likely to focus on specific issues or events that the interviewer is interested in. Both types of interview, however, tend to focus on aspects of the past and on an interviewee's recollection of them.
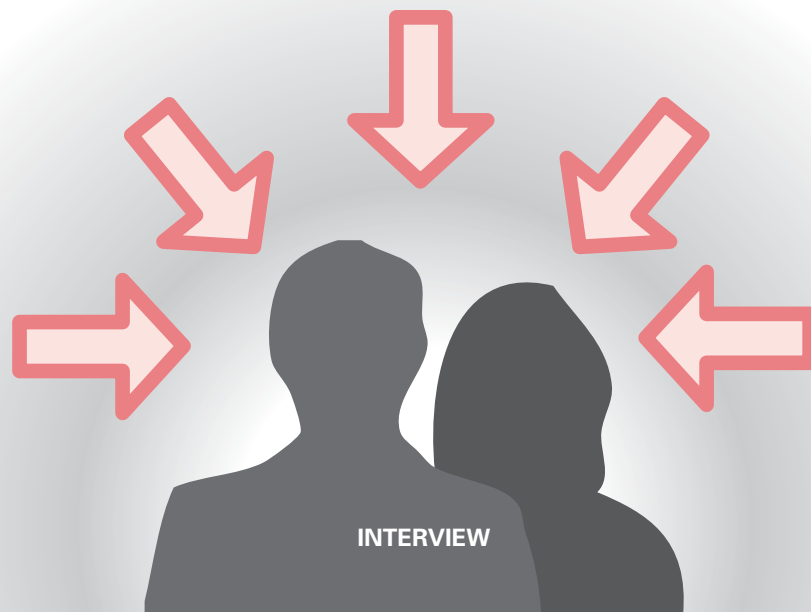
Stage 6. Gathering Primary Data (fieldwork)

Interview methods *continued*

Conducting your interviews

Being an effective interviewer takes a lot of skill and normally requires a good deal of training and time before a researcher can really become proficient. However, interview methods can be an option for you if you are prepared use some of your reading to learn more about the methods and if you follow certain guidelines.

The activity below will guide you towards conducting effective interviews. You can also download the text of the activity if you wish.

If you will need to interview more than one person at a time it may be better for you to organise a focus group.

INTERVIEW

Guidelines for conducting an effective interview

Stage 6. Gathering Primary Data (fieldwork)

Focus Groups

Focus groups are, in many ways, another kind of interview method, but the number of people being interviewed tends to be significantly larger. Many of the same guidelines apply to focus group methods as apply to interviews – plan ahead, capture the data, seek permission, listen etc. – but because of the number of participants additional skills and refinements are needed.

Focus groups tend to consist of between five and ten participants. If you have only two or three people in your 'focus group' it is probably better to call it an 'interview'. Any more than ten people and the process of managing so many 'participants' (our 'interviewees' are called 'participants' now that we are talking about focus groups) becomes unwieldy. The best number of participants to have in a focus group is probably six to eight. This is enough to get a free flowing discussion going, but not so many that the group risks getting out of control.

Focus groups (and interviews) are really useful for generating insights into a topic that you have not yourself considered or given adequate weight to. The goal of a focus group – and many qualitative interviews too – is to generate data and insights about your topic that may not necessarily have been on your radar at the start of your research. Focus groups in particular are at their best when you allow them to take their own course. In particular focus group researchers are looking to see how group experiences are discussed and how any potential differences of opinion manifest themselves.

We have already said that the best-practice rules that apply to interviews also apply to focus groups, but you also need to be aware of additional guidelines:

As soon as you begin to gather some information or data you will also need to begin to analyse it. This is what we shall cover in the next stage:

FOCUS GROUP

Stage 7. Analysing your data
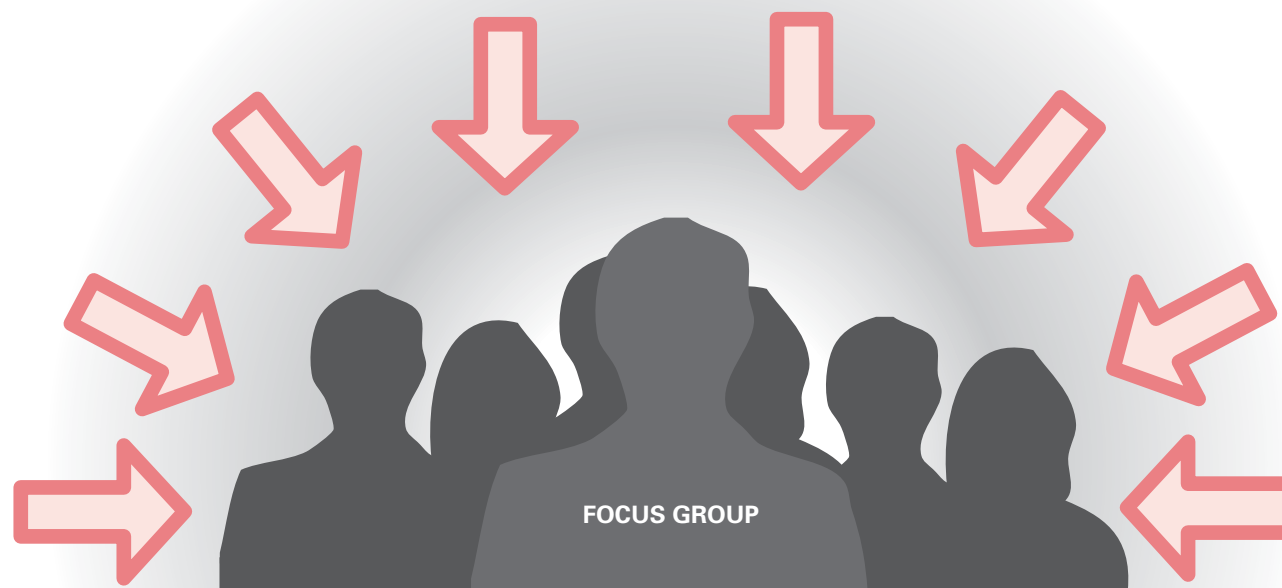
Data analysis will help you to create theories and arguments that respond to your question and which will also help you to structure your final report.

Learning Objectives:

In this section you will learn about:

- Building and working with theories / hypotheses
- Interpreting your findings
- Organising and sorting your data into coherent groups

As you start to gather your information and data you need to begin to make sense of it all. Researchers call this process 'data analysis', and, as we have seen already, it is advisable and likely that you have started to do this from the very beginning of your research project. Indeed, in many ways, doing a literature review and doing data analysis are remarkably similar processes, particularly when it comes to making sense of the secondary literature that forms the bulk of the materials you are likely to gather using the methods of desk research. Both the literature review and data analysis involve evaluating, categorising, sorting and sifting what you have read in such a way that relates to the research question you have posed. In addition, your data analysis should come up with theories and arguments that can be used to make sense of your research question and which can also be used to order and frame your research report.

Interpretation

The challenge facing you now is to combine the thinking you have done during your desk research with your interpretations of any other data you have gathered through other methods. Effective data analysis means that you are categorising the materials – all of the materials – into different topics, themes, standpoints and areas that will help you create coherent groupings that relate to one another logically and meaningfully. And while you're doing this you need to be reflecting on each piece of information or data, evaluating it for good and bad arguments, or good or less good use of evidence.

The key skill you need to deploy here is that of interpretation. Interpretation refers to the ways in which you will explain the findings of your research; how we attach significance to particular results; how we evaluate what is significant; and how we make inferences and draw conclusions from our sources. Effective interpretation involves the identification of patterns in the materials you gather, and these patterns need to be used to build a theoretical framework which makes sense of your information and which in turn can be communicated to your readers in your written report.

EVALUATE

IDENTIFY

INFER

EXPLAIN

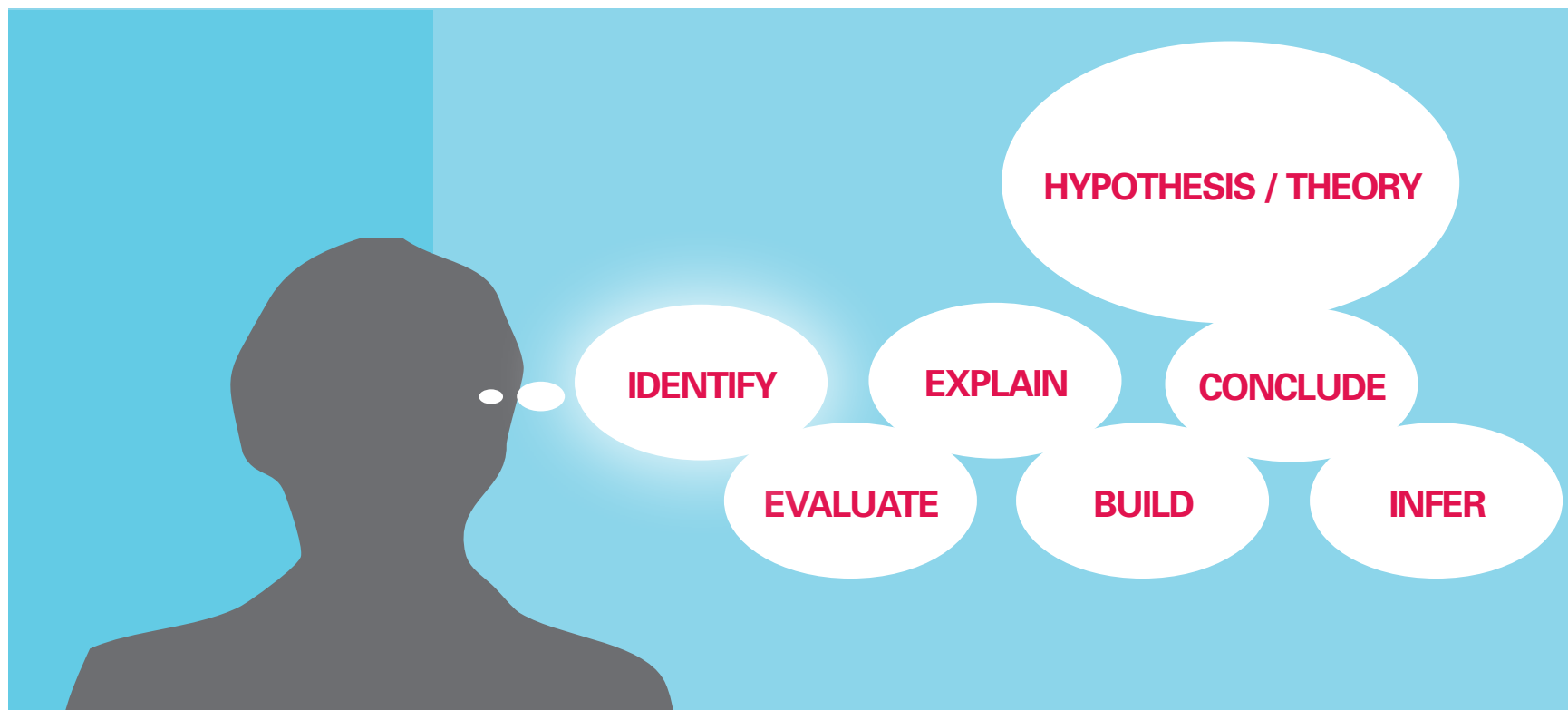INTERPRETATION

BUILD

CONCLUDE
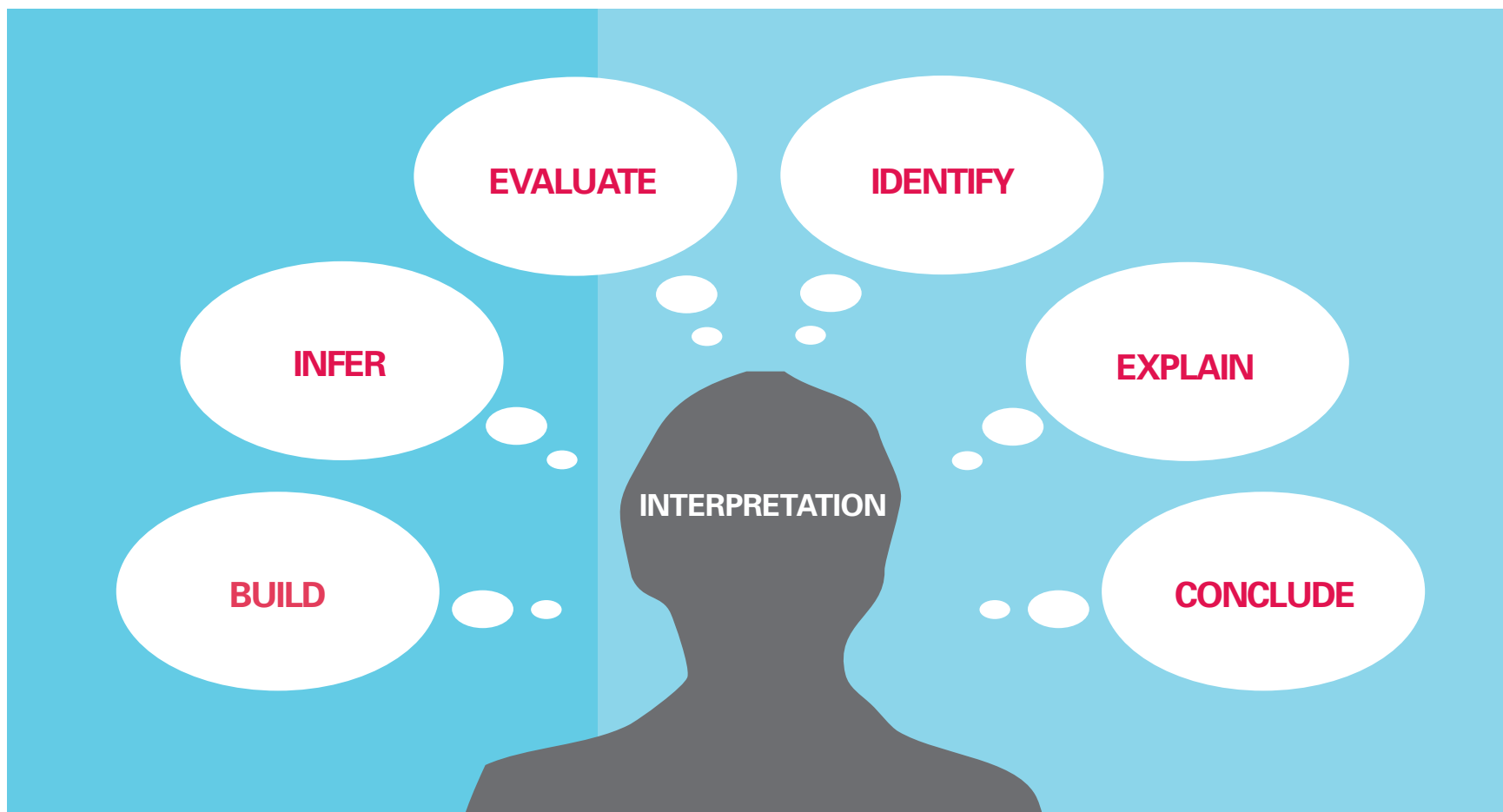
Building theory through interpretation

The goal of effective interpretation of your data and readings is to start to build a meaningful **theory** (or set of theories) about your topic. By 'theory' here we do not mean the kind of grand over-arching 'Theories' with a capital 'T', such as Marxism, which seeks to explain everything about how a society works. Rather, by 'theory' – with a small 't' - we mean a set of interrelated concepts and ideas that have a strong claim to being relevant as an explanation of what may be happening in terms of your research topic.

Thinking about theory can seem intimidating, but, really, we all create theories about things all the time. Your idea of why the dogs always bark at the same man in the street will really be a theory about why they do it, just as your thoughts about why the most popular pupil in your class is so popular will also be a theory. Sometimes in research we call our theories hypotheses. A **hypothesis**, in research terms, is used to refer to a theory we have about

a particular phenomena before we start to research it, and the goal of our research can be to test our hypothesis so we can generate a better theory about the phenomena at the end of our research. So our hypothesis may be that the plague is an airborne infectious disease (as was believed in 16th century Europe) but after careful evaluation of the evidence we may develop a new theory that actually the plague is spread by the fleas that infect rats, and so is not an airborne disease at all.

Scientists and social scientists alike rarely talk in terms of 'facts'; they much prefer to talk about 'theories' when they are seeking to explain what is happening in the world. Theories are their explanations of what might be going on in the world based on their interpretation of the evidence, and so building theory (or theories, plural) is what you need to do in your research.

Stage 7. Analysing your data

Interpreting your findings

In the section on literature review we started to look at how you should go about reading and evaluating the materials found during your literature search and generated by any other research activities you have used. Now the materials of your literature search need to be related to the data you have gathered through other methods and vice versa. You are effectively creating a dialogue between all of the sources and types of evidence that you have gathered so that you can create your arguments in your research report.

The ways of thinking about your evidence that are necessary to good literature reviewing also apply to interpreting all of your other findings / data too. Review the guidelines already given to you for this in Stage 4 and apply them to your remaining sources.

If you have gathered survey data, interview data, or focus group data, or if you have used other methods or collected lots of secondary data, you still need to be thinking about what that data tells you using those same analytic themes that you have deployed in your desk research.

Statistical and qualitative data analysis

When they talk about data analysis, academic researchers will normally also be talking about their own original – primary – data. Those who have collected lots of numerical data (quantitative data) will need to select the most appropriate statistical techniques to model and make sense of that data. Equally, those who have gathered lots of qualitative data, will often adopt sophisticated approaches to coding and analysing that data. This process of 'qualitative data analysis' (or 'QDA') can take a number of different guises.

It is beyond the scope of this guide to provide step-by-step guidance in statistics or QDA. However for only those of you who have generated significant amounts of quantitative or qualitative data will need to consider using more formal or advanced methods of statistics or QDA.

To help you do this there are lots of good textbooks aimed at beginners that you could read, including:

Statistics:
- Derek Rowntree, *Statistics without Tears: An Introduction for Non-Mathematicians*, Penguin Science, London, 2000.
- Neil Salkind, *Statistics for People Who (Think They) Hate Statistics*, SAGE, Los Angeles, 2014.

QDA:
- David Silverman, *Interpreting Qualitative Data*, SAGE, London, 2015
- Miles, Huberman & Saldaña, *Qualitative Data Analysis: A Methods Sourcebook*, SAGE, Los Angeles, 2013.

Stage 7. Analysing your data

Bringing it all together

The main goal of the data analysis stage is really to synthesise – to bring together – everything you have gathered from your desk research and your primary research. The purposes of this are:

- to see how your different sources relate to one another;
- to double check on the main themes and theories that have emerged from your researches;
- to identify whether new themes and theories have emerged as a result of any primary research you did, and;
- to allow you to start evaluating your materials to enable you to decide what to include and exclude in your final research report.

As you start to work through these four considerations, you should be physically positioning what you have into an emerging plan of your report. Your interpretations of the significance of the different data you have gathered will then start to become the theories that you will articulate in the report proper. These 'theories' then become a better way of thinking about the arguments you will make in the report.

Such a process of sifting and positioning will have been well under way in the desk research stage of your work, but if you have gathered primary data of your own you should now be evaluating what you have learned from your primary researches and how that makes you reflect differently (or not) on the secondary materials you assessed for your desk research work. What are the differences between your secondary and primary research? How would you reflect on this? Is one better than the other, or are they simply different, or telling you slightly different things about the world?

Tip: Data analysis with writing up in mind: One of the best ways to think about your data analysis stage is to see it as the final process of developing your theories and arguments in advance of planning your written research report. A good way of preparing for the write up is to use the time when you are analysing your data to create a first draft of your research report plan, and to position your different theories and different chunks of supporting evidence in the plan appropriately. This could save you valuable time at the final write up stage.
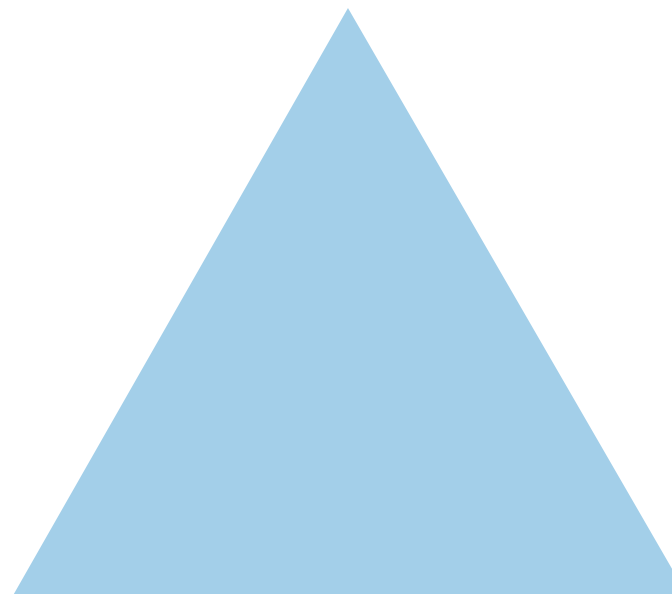
Click on the first step to reveal the path from Data Analysis to Planning Your Research Report

It all comes down to this!

Learning Objectives:

In this section you will learn about:

- Planning your time and your report
- What your report should contain

If you have followed the advice in this learner's guide you should not have arrived at this stage empty handed. The advice throughout this guide has been that you should be constantly reflecting on the process of thinking about your topic, reading the literature, gathering and analysing your findings by writing up and summarising your thoughts and arguments in your research folder as you go along. If you have done this well and diligently you should already have a lot of material that, with some editing, can be added straight into your research report.

The following are some basic guidelines for your Cambridge Research Report:

- The report should be organised properly with an introduction; a main body consisting of a description and justification of research methods and methodology, and an analysis and evaluation of the relevant different or alternate perspectives of the research; and a conclusion. It should include sub-headings and must include references (see below).
- You must acknowledge in your report where specific ideas and information come from. You must have adopted an appropriate referencing and citation system related to the academic discipline(s) in which you are working. The report must include a bibliography and full bibliographical references must be given for any quotations.
- You must use, maintain and submit a research log in support of the research process.
- The report must be 4500 – 5000 words in length, and must not exceed 5000 words, excluding any footnotes, the research log and the bibliography. You must declare a word count. Any work beyond 5000 words will not be marked and will not be included in the assessment.

Stage 8. Writing up your Cambridge Research Report

The importance of planning

Regardless of whether you have been a model researcher and have kept a research folder full of sections already written up, or whether you have left it all to the last minute and hope to cobble something together from the mass of your notes, the most important thing to stress now is that you must plan your research report very carefully.

Time spent planning the report's structure in detail now will save lots of time when you start to write everything up. So please resist the urge to simply start writing to see where it goes; it is nearly always a bad idea to do this and will make it so much harder for you to create a clear structure and a good balance in your report.

For many people the best approach to planning a written assignment is still the old-fashioned way: planning on paper (preferably on the biggest and blankest piece of paper you can find; and let's face it, you're probably going to need several sheets of paper!) using pencils, pens, coloured highlighters etc. You can plan in Word, or in Excel, or by using diagramming software to create flow charts and other visualisations, but it is probably still not half as good as planning by hand. This really is the best way of composing and ordering your thoughts, evidence and arguments.

You need to spend at least a whole day planning your report. It may even be worthwhile spending two or three whole days. Keep away from any distractions (keep your phone switched off, and keep away from email and the internet) and really focus on putting your plan together.

What goes into your plan is ultimately up to you, but what follows is a guide to some of the key elements of a good research report and some of the tasks you need to complete while doing your report planning:

Plan your time

Ideally, when you created your original research timetable in Stage 3, you allocated enough time for you to write a 5,000 word report. This should have included a realistic assessment of just how long it will really take you to:

* write 5,000 words
* draft your report plan
* redraft several versions of the report itself
* make the required edits and cuts
* check your references
* add missing references
* finalise your bibliography

Whichever way you look at it, writing up the final report contains a lot of tasks, so you need allocate sufficient time to complete all those tasks comfortably.

Now plan your time again: You have estimated how long it will take to plan, draft, redraft, edit and check references and bibliography. Now look again and add time for sleeping, eating, socialising, other work and responsibilities and contingency time in case something goes wrong. Now you can really plan your time.

Stage 8. Writing up your Cambridge Research Report

Planning your research report

By understanding the process of good planning you will take yourself most of the way through understanding what has to go into a good research report. A good plan is a blend of a route map (preferably with arrows, connecting lines, etc.) which locates the main points in your report in relation to one another, and a list of the appropriate types of content that should be added to each point on the map. It might be helpful to think of each of these points as sections or paragraphs (depending on their size and significance) to be slotted into the final report.

Sub-divide/segment: Writing and reading 5,000 words without breaks, without sub-headings, sections and paragraphs, is confusing for both writer and reader. Plan carefully by sub-dividing your report into digestible sections that are clearly labelled.

Synthesise: No report can do justice to every last detail of evidence and all the subtle differences between the different pieces you have read, so you need to synthesise these many different elements into fewer elements grouped appropriately. Synthesis is basically the combining of evidence and arguments on and across a number of levels, so as you plan your project, think about how to group sub-topics, data and arguments together in legitimate ways to create a valid summary.

Evaluate: Weigh up the value and significance of each element of your report. Is that source a good one? A better one than an alternative? Is that theme an important one? Does that theme have consequences or cause something else to happen? Weigh up the arguments and evidence you have gathered and try to sort and present the most significant evidence and arguments and leave out what you regard to be of least significance.

Tip: Benchmark against your word limit: Your absolute limit in your research report is 5,000 words. The best way to ensure that you have the right balance in your report is to use your plan to allocate section word limits. This will help you not only keep under your limit, but will give you a good idea of how much you can and cannot say in each section, and this in turn will help you think about what you can and cannot leave out in each part of your report.

Planning your research report *continued*

The introduction

Your report obviously needs a good introduction. This will include addressing and critiquing your question, and also set out the journey the reader is about to follow by explaining the structure of the report. It should pose and summarise some of the main points, arguments and controversies that you will deal with in more depth in the main body of the report.

Address your question: The title of your report is your research question, but it's always a good idea to address your question in your introduction. Why did you come up with that question? What is your interpretation of the question? What is the significance of the question?

Critique your question: Any research question can be interpreted and answered in many different ways. You have made certain decisions about this and have answered your question in your own way, so show your reader that you have reflected on your question and that you are aware of a few other ways that another researcher might have tackled the question.

State your aims and theories: State clearly at the very start what you set out to achieve and what the aim of your report is. What particular theories have you developed about your topic?

Create a logical structure and explain it: Your planning is all about deciding what goes where, in what order and relation to what. These are significant decisions, and you should take some space in your introduction to explain to the reader what the order of the report is and why it is structured like that.

Be clear about your own standpoint and values: Your readers will be interested in your thoughts and your own opinions of the topic. For the avoidance of doubt you should be clear both in your introduction and in your conclusion where you stand and you should be able to justify your position using evidence over the course of the report. This would also play a part in the 10 minute viva with your teacher.

Planning your research report *continued*

The main body of your report

The main body of your report is your chance to show all of the results of your research and the skills that you have developed as a researcher. You should keep the following considerations in mind as you write it:

Have an over-arching argument: It is not enough merely to describe everything you write about in your report; you need to show how you have interpreted your findings, synthesised your evidence and interpreted your data by developing your report along the lines of an over-arching argument about the nature of your research question and your topic.

Do not just describe: One of the most common mistakes that students make is that their work can be overly descriptive and not 'critique-ful' and analytical. This applies not only to the over-arching argument as stated above, but also to each sub-section of your report, which all need to show evidence that you have deployed the critical and methodological skills necessary to this course.

Write about your methods: Much of this guide has looked at research methods, and much of your report too will need to spend time setting out the methods you used, the sources you looked at and the decisions you made about research design, and your reflections upon those decisions. Do not leave any of this unsaid.

Explain: When presenting your research report you always need to explain why you are writing about this or that piece of evidence or this or that argument. What is the context of it in terms of your research question and of your over-arching argument? What might the economic, political or philosophical context be? Explain why you are deploying your arguments and evidence within the context of your written report. For instance, you might say that you will write about the origins of a particular theme in your report because it is an important theme and it is the way it is because of how it developed in a particular time and a particular place. What you're doing is letting your reader know why you're doing what you're doing.

Justification: It is vital in your research report that you justify the decisions you have made in developing your argument and your research design. This process of justifying should extend also to your choice of what to include in the report. This is all about supporting all the claims you make in your report with evidence.

Be valid: make sure that your thoughts and conclusions about things are valid. Explain how it is appropriate to interpret this or that author as supporting or being against this or that argument. Does the literature, the data, the evidence support your interpretation?

Avoid sweeping generalisations and overstatements: Really ask yourself whether the evidence warrants what you are saying in your report to the degree that you are saying it. A common mistake is to over-generalise, which is to take a finding – let's say that the French and Russian revolutions both occurred at a time when food and money were scarce – and then assume or infer much bigger causal properties to that finding (e.g. we could infer, wrongly, that a revolution will occur whenever the majority of people are hungry and without money).

Reflect: Reflection is a key skill for researchers and is a key element in your assessment. Be self-aware about the decisions you have made. Think about not only your substantive argument and any changes you have had in your thinking about your topic and argument, but think also about the methods you have used, how you would justify your research design and your choice of sources. Ask yourself 'Why did I do that?' and 'What does it mean, in terms of the report's main arguments but also in terms of your journey as a researcher?'

Review the literature: Whether you do this in a formal 'Literature Review' section or chapter, or whether you thread your literature review through the whole body of your research report, it is imperative that you demonstrate how widely you have read; show the range of sources you have looked at; demonstrate that you can critique and synthesise the ideas, arguments and data you have encountered.

Critique: You will need to critique your materials, your arguments and those of others throughout your report. In many ways, 'critiquing' is similar to evaluating. A 'critique' is a critical analysis of a topic, argument, publication or piece of evidence. It is 'critical' in that you are using careful, considered, analysis and judgment to critique. To critique is also to be analytic in the sense that you should be separating or breaking arguments and evidence into smaller constituent parts. A common misunderstanding is to equate critique with critical or negative; to critique can be negative, but it can just as easily be supportive or neutral.

Stage 8. Writing up your Cambridge Research Report

Planning your research report *continued*

Be open to opposing standpoints: Part of the purpose of a research report is to set out the different perspectives on your topic. This will mean inevitably that you will have to write about arguments and standpoints that you do not agree with. You need to critique, and even perhaps criticise, such standpoints. To do this you need to be evidence-based to support your positions and you need to be 'charitable'. By being charitable we are acknowledging that we understand why someone might think the way they do and we may acknowledge its context and merits. For instance, we can criticise ancient astronomers for arguing that the Earth was the centre of the universe, but we would need to be charitable and acknowledge that in their time they did not have access to observational data that might have told them otherwise.

Avoid being over-critical and uncritical: It is very easy to fall into one of two dangerous positions when writing your report: That of being too critical of everything, where you argue that none of the existing research on a topic is any good or has anything valid to say about the topic, and that of being too uncritical, whereby you do not subject any of your sources to proper scrutiny even where such sources cannot all be true or valid. Be careful.

Quote sparingly and appropriately: Your report should be written by you. There is nothing worse than a research report that is actually a series of long quotes strung together with short introductions by the author. There are times when you do need to quote – and you can quote a commentary, data, etc. – but the main heavy lifting of writing about everything you need to cover in your report needs to be done by you in your own words. Any quotations you do use should be short and should clearly support the argument you are making. Each quotation must be properly referenced, of course.

Communicate: Obviously your report needs to communicate to the reader. This demands that you choose your words carefully. Ask yourself whether what you have written is clear and to the point. Can what you have written be misinterpreted? If your writing is vague and your phrasing is sloppy your reader may well get the wrong end of the stick and think you are saying something that you have not intended to. Ask yourself whether what you have written is convincing and think about whether your reader will be convinced.

Define your key terms and explain your terminology: It is likely that you will need to use some specific phrases and terms that may not be familiar to your readers. If you do use terminology that is technical, advanced, or unusual you need to define the term for your readers. Equally, many words or phrases can have different meanings or interpretations, so if you are using a word that can be used in different ways explain how you are using that word. Create a glossary if you feel it is needed.

Avoid irrelevancies and digressions: Keep a focus, do not meander, or go on seemingly interesting detours that do not add to your overarching aims or arguments. You only have 5,000 words and you can ill-afford to spend a few hundred words exploring an interesting but irrelevant side issue.

Write a conclusion: Your conclusion needs to summarise your over-arching arguments, and should recap your question and how you answered that question. It should refer back to the main supporting evidence underpinning your overarching argument, and justify your own standpoint from that evidence.

Stage 8. Writing up your Cambridge Research Report

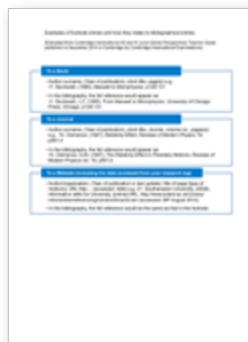## Planning your research report *continued*

Avoid plagiarism

It should go without saying that your report must be free of plagiarism. Plagiarism involves passing off someone else's work or ideas as your own. This might happen in a number of different ways:

- Failing to acknowledge quotations (or images/diagrams/data)
- Using particular phrases or sentences from another author without giving them credit via inverted commas and a footnote
- Writing something that is only very slightly different (e.g. a few words altered) to another author's work (i.e. paraphrasing it)
- Buying a project from an internet site and presenting it as your own
- Downloading and pasting text or images from an internet site without acknowledgement
- Getting somebody else to write all or part of the project

You will have to submit a statement of declaration, verified by your teacher, that the report is your own work and yours alone.

Large chunks of copied text will not be marked, and if passed off as your own work may result in your report being rejected. As this is evidence of cheating, it is also likely to affect your other examinations as well. Cambridge puts all Cambridge Research Projects through plagiarism detection software packages.

Planning your research report *continued*

Reference fully

Your referencing system should be complete and accurate and should follow the conventions of your discipline. You are expected to present evidence from your research, which may take the form of quotations, data, images, etc. but whatever you use **you must acknowledge it**. Failure to do this will be seen as plagiarism (see previous page).

References in the text should point to sources listed in the bibliography. This can be done quite simply by using a superscripted number corresponding to a footnote detailing the source the quotation comes from (including page number). Full details of these sources must, in turn, be set out in the bibliography. The footnotes and bibliography together should make it easy for anyone reading your project to track down the precise source of your evidence if they wish to do so. **The activity below provides examples of**

your to use footnotes to reference books, journals and websites. It is also downloadable on the previous page.

Using footnotes is just one way of referencing and is given here as an example only. Any recognised and consistently applied bibliographical system is acceptable, and you are encouraged to investigate which system is most appropriate for the kinds of sources and arguments you are using in your selected area of research. This is an important part of the research process. The actual system you adopt is less important than your using it consistently.

The bibliography should not only include all sources from which you have taken your quotations, etc., but it should also include all the sources you have read and/or consulted in your research which have helped you to form your opinions about the research question.

Planning your research report *continued*

Now you have your first draft

With the first draft of your report completed there are few steps left before you submit it:

Re-read your report: Unless you are unusually gifted writer – or you have been too careless with your time planning and have run out of time – you should now spend some time reading your own report. If you are able, you should also get a friendly intelligent person to read your report. The goal is to spot mistakes, typos, sections and sentences that do not make sense and to have enough time to correct or improve anything that needs correcting or improving. The report you have read is basically your first draft, and so the task in front of you now is to redraft your report into a final draft.

Anticipate your critics: A good way of 'self-critiquing' your report plan and your written draft is to try to anticipate the responses of your reader to your work. This can be a hard thing to do because it involves reading your own work through the eyes of your readers and not your own writer's eyes, but if you can do this – and do it in such a way that identifies possible problems in your work - it is a great way of testing out your arguments and explanations and making them stronger.

Draft and re-draft: We noted at the beginning of this list that you need to plan your time to include drafting and redrafting your report. Your first draft ought not to be your final draft, and you will need to read, reflect and correct any flaws that you identify after several close readings of your first draft to refine and polish your final draft. If possible, take some time away from your report before reading it so that you can assess it with fresh eyes. It is all too easy to read a report as soon as you have completed it and read the report that exists only in your head rather than the one that is on paper.

Use the download or the checklist on the next page to check all of the points raised in this stage to help you make certain that your report is absolutely ready for submission:

Planning your research report *continued*

Pre-submission Checklist: In planning and writing up your research report, have you…?

1. Planned your time – realistically to cover everything you need to do? ☐

2. Sub-divided/segmented your report clearly and logically? ☐

3. Synthesised your evidence in a valid way? ☐

4. Evaluated your evidence fairly and as objectively as possible? ☐

5. Written a clear introduction in which you have:

   a. Addressed your question? ☐

   b. Answered your question? ☐

   c. Critiqued your question? ☐

   d. Stated your aims and theories clearly? ☐

   e. Created a logical structure and explained it to your reader? ☐

   f. Been clear about your own standpoint and values? ☐

6. Articulated an over-arching argument? ☐

7. Written reflectively about your methods and research design? ☐

8. Explained your decisions and arguments? ☐

9. Warranted your claims using evidence? ☐

10. Been valid in your interpretation of the evidence? ☐

11. Avoided and removed sweeping generalisations and overstatements? ☐

12. Reflected on your learning – both on your research design and topic? ☐

13. Reviewed the literature ☐

14. Used the methods of critique? ☐

15. Been charitable to opposing standpoints? ☐

16. Avoided being over-critical and uncritical? ☐

17. Quoted sparingly and appropriately? ☐

18. Communicated clearly without room for misinterpretation? ☐

19. Defined your key terms and explain your terminology? ☐

20. Avoided and removed irrelevancies and digressions? ☐

21. Written a conclusion? ☐

22. Avoided plagiarism? ☐

23. Referenced and cited your sources fully? ☐

24. Re-read your report? ☐

25. Anticipated your critics? ☐

26. Re-drafted and ironed out flaws and mistakes? ☐

Stage 8. Writing up your Cambridge Research Report

Submitting your Cambridge Research Report

You should submit your completed Cambridge Research Report to your teacher on or before the deadline date.

Before submitting it you should ensure that it complies with all of the following:

- The report must include a bibliography and full bibliographical references must be given for any quotations.
- Your research log must be included as an electronic appendix and cross referenced as necessary within the main body of the report.
- The report must not exceed 5000 words, excluding any footnotes, the bibliography and the research log. You must declare a word count. Any work beyond 5000 words will not be marked and will not be included in the assessment.
- After you have submitted the completed report to your teacher and he/she has had an opportunity to read it thoroughly, your teacher will hold a 10-minute interview/viva with you, giving you the opportunity to explain and justify your work with reference to

  – The choice and use of research methods/methodology
  – The justification of any conclusions arising from the research finding
  – Providing oral reasoned reflection on what you have learnt and achieved throughout the research process
  – Seeking confirmation that the work submitted is yours and that you created it working alone

- Cambridge use plagiarism detection software packages. You must include a statement of declaration that the research report is your own work and your teacher must verify this declaration. **The signed declaration must be included as part of the submission**. Your teacher will be able to provide you with a template for this declaration.

Your research report will initially be marked by your teacher. It will then be sent to Cambridge for their assessment and validation of your mark.

We at Cambridge look forward to reading it.

Definitions

Bibliography

The bibliography records any references made in the text in an ordered list normally found at the end of a report.

Contrasting

Different perspectives should be genuinely contrasting (i.e. they should come from a different world view rather than represent subtly different takes on an issue). Although alternative perspectives don't have to be rooted in different geographical areas, genuinely different global perspectives are likely to created by different cultural, geographical and political environments. Looking at different countries and/or cultures would therefore be a good way of accessing different global perspectives.

Critical Path

The Critical Path is a process whereby the researcher conducts a detailed analysis and evaluation of a point of view, carries out research, identifies and evaluates evidence and sources for and against competing points of view, explores the impact of research on personal perspectives and then communicates their views, information and research effectively and convincingly.

Data analysis

Data analysis aims to develop theories and arguments that can be used to make sense of your research question and can then be used to order and structure and frame your research report. This involves evaluating, categorising, sorting and sifting information we have researched in such a way that relates to the research question that has been posed.

Glossary

A glossary is a list of words and phrases that are used in a text which the average reader of the text may not understand. It lists these terms alphabetically and provides detailed definitions for them. It is usually included at the end of the text. This definitions list is a type of glossary.

Iterative process

An iterative process means repeating a cycle of process to narrow down to a high quality outcome.

Methodology

The term methodology refers to the way researchers think about and reflect upon the process of doing research. In many ways, methodology refers to how we theorise about our research design. Methodology is the study of research; the way we think about issues of research; the way we theorise about doing research and justify our decisions as researchers.

Perspective

A perspective is a viewpoint or standpoint, sometimes embedded in or strongly informed by a world view. Perspectives tend to be coloured by the circumstances in which people live, the language they use and the ideas that surround them. Underlying any perspective are concepts, principles, uses of language and attitudes which are often implicit and may be emotional and subconscious.

Quality of debate

The quality of a debate, or discussion, within a piece of research depends on how easy or difficult it is to answer the question. The more difficult it is to answer the question or the greater number of disciplines and lenses that can be brought to bear upon it, the higher the quality of the debate will be.

About this Guide

Referencing

Referencing is the formal acknowledgment of the sources used in your research. Not referencing the work of others can constitute plagiarism. Cambridge does not specify the use of a particular referencing style however two popular styles include:

Harvard referencing

Harvard referencing consists of two elements - in-text citations and detailed references. Both of these elements together are known as referencing. The in-text citation consists of the author(s) surname and the date of publication. For example:

> (Smith, 2014)

The detailed reference sets out the full information for the resource including information on the author(s), year of publication, title, and place of publication. For example:

> Smith, R. S., 2014 Research Methods for beginners. Cambridge: Cambridge University Press.

Chicago referencing

Chicago referencing includes in-text citations using superscript numbers that refer to footnotes that acknowledge the source of the information. A bibliography is expected at the end of the document, which provided full details of all sources cited and consulted, by the writer.

In the main text – superscript number (in numerical order):

> Maxwellian field theory of the late 19th c. gave way to theoretical premises about the microstructure of matter based on the concept of the electron11

In the footnote – Author surname, (Year of publication), short title, page(s):

> 11. Buchwald, (1985), Maxwell to Microphysics, pp.128–31

In the bibliography - the full reference would appear as:

> 11. Buchwald, J.Z. (1985), From Maxwell to Microphysics, University of Chicago Press, Chicago pp.128–131

Research design

A research design is basically a complete plan of how we expect to get from coming up with a topic, all the way to researching that topic and writing a research report about it. It comprises of how we plan to locate sources of information and select specific methods to gather new information.

Research Log

The purpose of the research log is to help plan, monitor and review progress and thinking throughout the research process. The log is included as an electronic appendix and cross referenced within the main body of the report.

The log should contain supporting evidence for how the research progressed the way it did. You may wish to include:

- Details of research as it is carried out:
  – Websites accessed and their URLs.
  – Books/journals/magazines consulted.
  – Using the proper referencing styles.

- Brief notes on content:
  – Including useful quotes (noting carefully where they came from) and comments about credibility/reliability/authority of source.
  – Questions that occur further research or to ask the tutor.
  – Ideas about how the research fits into the overall plan.

- Preparation and record of meetings with your teacher:
  – Questions for the teacher.
  – Suggestions made by the teacher.
  – Ideas about what to do next.