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# Study and Research Skills for Students of Psychology

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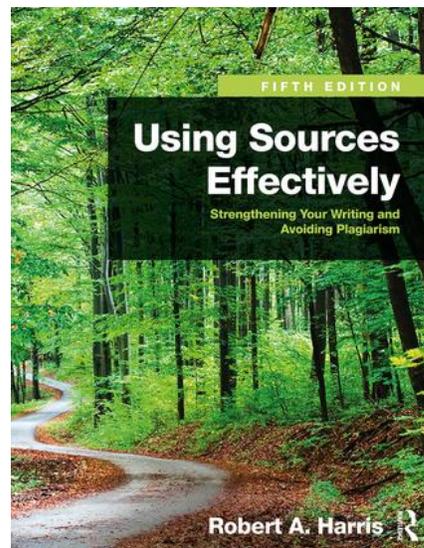
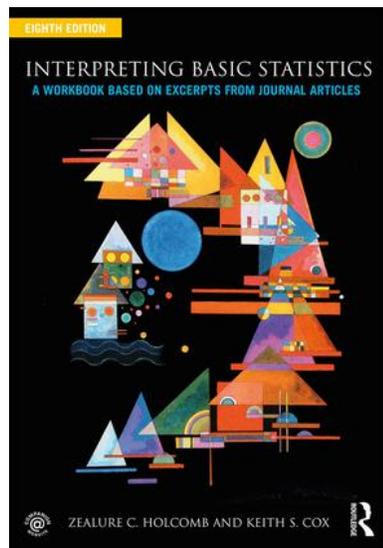
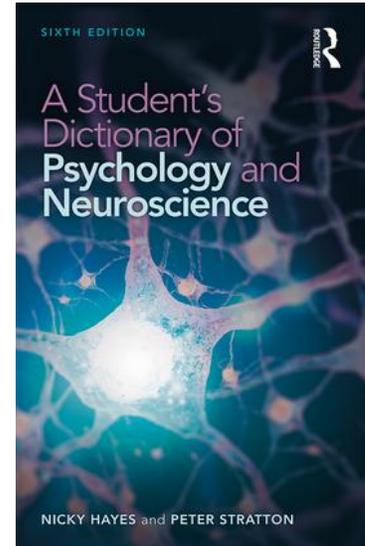
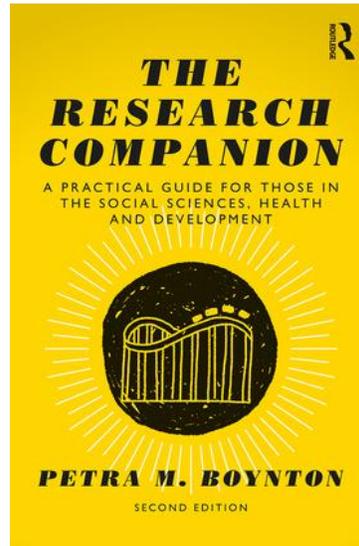
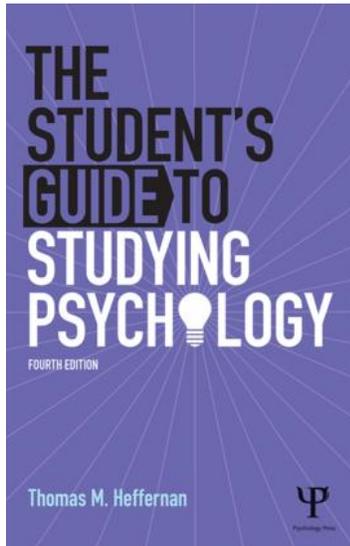


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# Introduction

This FreeBook has been made exclusively for EFPSA in order to give you a brief overview of the most essential study and research skills for Psychology students. It consists of excerpts from several books published by Routledge, curated specifically to suit the interest of EFPSA members.

The first chapter will be a study guide to lectures, seminars, and tutorials. Often, a wide array of topics are covered during our lectures. Understanding everything is important, but retaining the information for later reference is a crucial and more challenging task. Chapter 1 will therefore touch on the best methods of learning and note-taking.

A significant part of studying Psychology relates to doing research. In order to do good research, you first need to plan. Therefore, our second chapter instructs the reader on how to plan research successfully.

Chapter 3 focuses on writing essays, and will answer these questions: What is the process of writing an essay? How does one include all important information, while keeping the text readable and clear?

The fourth chapter will discuss data measurement and frequency: two very basic concepts in statistics. We hope to get you curious enough to want to learn more, so that you can also become that stats expert you need to be to conduct powerful research in psychology.

Our last chapter is about source material. In order to strengthen your writing and to avoid plagiarism, you need to understand how to deal with different sources of information. This begins with understanding how to find, choose and evaluate sources.

Ultimately, this book is not only an easy yet useful read for yourself, but also great for making non-psychology students interested in psychology. Keep this book close for whenever you need to get a quick re-cap of essential study and research skills.

**Sander Roosen**  
*Partnership Coordinator*  
EFPSA (European Federation of Psychology Students' Associations)

**Note to readers:** References from the original chapters have not been included in this text. For a fully-referenced version of each chapter, including footnotes, bibliographies, references and endnotes, please see the published title. As you read through this FreeBook, you will notice that some excerpts reference subsequent chapters. Please note that these are references to the original text and not the FreeBook.



## Authors

### *The Student's Guide to Studying Psychology, 4<sup>th</sup> Edition*

**Thomas M. Heffernan** is a Senior Lecturer at Northumbria University, UK. Tom has taught psychology to undergraduates for over 20 years and has supervised numerous undergraduate projects at first, second and third year. He wrote this book in response to the many enquiries he has received about studying psychology.

### *The Research Companion: A practical guide for those in the social sciences, health and development, 2<sup>nd</sup> Edition*

**Petra M. Boynton** is a Social Psychologist, specialising in International Health Research from a critical perspective. Over the past 20 years she has taught, supervised, and undertaken research across the social and health sciences and development within university and community settings. Her research focuses on sexual health; media; and the impact of pregnancy, pregnancy loss, and parenthood on relationships. She applies her work through a weekly advice column for The Telegraph.

### *A Student's Dictionary of Psychology and Neuroscience, 6<sup>th</sup> Edition*

**Nicky Hayes** has been granted the British Psychological Society's Award for Excellence in Psychology Education. She is a Chartered Psychologist, a Fellow of the British Psychological Society and an Honorary Life Member of the Association for the Teaching of Psychology.

**Peter Stratton** is Emeritus Professor at the University of Leeds.

### *Interpreting Basic Statistics: A Workbook Based on Excerpts from Journal Articles, 8<sup>th</sup> Edition*

**Keith S. Cox** is a Clinical and Personality Psychologist. He teaches research methods and statistics at the University of North Carolina, Asheville, where he holds the rank of assistant professor. He uses research methods and statistics as he investigates post-traumatic stress disorder (PTSD) and personality.

### *Using Sources Effectively: Strengthening Your Writing and Avoiding Plagiarism, 5<sup>th</sup> Edition*

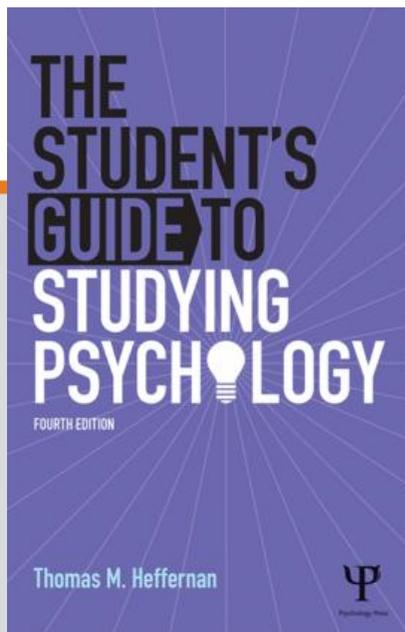
**Robert A. Harris** (PhD, University of California, Riverside) taught English at college and university level for more than 25 years. He has also worked in the area of instructional design. Dr. Harris' other books include *The Plagiarism Handbook* and *Writing with Clarity and Style: A Guide to Rhetorical Devices for Contemporary Writers*.



CHAPTER

1

# A STUDY GUIDE TO LECTURES, SEMINARS, AND TUTORIALS



This chapter is excerpted from  
*A Student's Guide to Studying Psychology*  
by Thomas M Heffernan.

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# A STUDY GUIDE TO LECTURES, SEMINARS, AND TUTORIALS

Excerpted from *A Student's Guide to Studying Psychology*

*This chapter considers the nature of a university degree, the types of skills that are developed on a course of study in psychology, and what the major modes of presentation are on a course. In addition, guidelines on effective note taking and on how to summarise materials encountered on the course are also considered.*

The majority of university undergraduate degrees are currently 3 years in length and are made up of  $2 \times 15$  week semesters (which include teaching and assessment periods) – with a number of older universities having 3 shorter semesters (fewer teaching weeks). However, some universities offer part-time undergraduate degrees (e.g., in the evening) and some even offer undergraduate degrees online. The majority of degrees are organised into modules of study. Within each semester you will be required to take either year-long modules (e.g., a year-long research methods module) and/or semester-long modules (e.g., a semester-long module in abnormal psychology). Each year (or “level”) is made up of 120 credits and a full 360 credits (3 years) is needed for the undergraduate degree to be awarded. Year-long modules are the equivalent to 20 credits, but a 20 credit module could be condensed into one semester. Shorter modules such as “option modules” are typically worth 10 credits each (again some may be extended into a 20 credit size). It should be noted that degree structure and module credits do change periodically. The exact structure and module credits should be explained at the start of each year during an “induction talk”. It is typically the case that as you progress through the degree there is increasing “choice” in the modules that you can opt to take. For example, at Northumbria University in the UK, the first year (level 4) is predominantly made up of “core” modules (modules which are compulsory), with the inclusion of option modules at year 2 (level 5) and at year 3 (level 6) – with the addition of a large psychology project module at level 6. In the US, one of the first things you might notice is the difference in terminology used to describe certain aspects of academia. For example, the US term “course” actually has the same meaning as the British term “module”. So if an American student asks about which “courses” you are taking, what they actually want to know is what modules you are taking. Similarly, whereas in the UK one “reads” a subject, in the US one “majors” in a particular field of academic study.

In the traditional approach to college teaching, the majority of class time is spent with the tutor lecturing to the students and the students watching and listening. Increasingly in the university sector, there has been a move towards a



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more “student-centred approach” to learning – the aim of which is to shift the focus away from the lecturer and engage the student more in her or his learning. The methods used to achieve this include active learning – in which the student solves problems, answers questions, formulates questions of their own, discusses, debates, or “brainstorms” during class. *Cooperative learning* – during which students learn to work as part of a team, which promotes positive interactions and develops individual accountability within the team. *Inductive teaching and learning methods* present the student with a series of challenges (e.g., questions or problems set by the lecturer) and the students then learn the module material with a view to solving these challenges. Such methods include: inquiry-based learning, case-studies, problem-based learning, project-based learning, discovery learning, as well as presentations. The final-year psychology project is self-directed, with the supervisor there to guide the student through the various stages in completing the project and to provide ongoing feedback. It is widely believed that student-centered methods are superior to the traditional teacher-centred approaches in terms of promoting a more in-depth understanding of the discipline, self-confidence, and the skills needed to become an effective graduate.

Before progressing on to the more practical aspects of the book, it might be useful to consider some of the types of skills one expects a student to develop on a psychology course (as well as other academic courses).

## SKILLS DEVELOPED ON A PSYCHOLOGY COURSE

In higher education in general there has been an ever-increasing focus on facilitating the development of a number of key skills in students. Two groups of skills are referred to here: *core* and *transferable skills*. Core skills refer to those skills developed throughout a course of study in psychology. Transferable skills is a term used here to refer to certain skills that are deemed desirable for all graduates to develop by the time they leave college or university – and they are seen as an important part of the notion of “student gradueness”. These skills are considered here in general terms. Students are advised to consult with their own personal guidance tutor, or study skills adviser, at their own institute for specific guidelines on skills relating to that college or university. All college and university institutes will have developed guides or a model of how such skills should be developed on their courses.

In reality, many of the core skills developed throughout a course of study become transferable skills that can be used beyond the course, in future careers.



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So, although a distinction is made here, in reality these skills form part of the same group of skills utilised both on a psychology degree, as well as being transferred beyond the degree and into a prospective career.

## CORE AND TRANSFERABLE SKILLS

The types of skills one is encouraged to develop on a course include:

1. *Oral, visual, and written communication.* These skills can be developed through interactions during workshops, tutorials, seminars, and (to some extent) lectures.
2. *Numeracy and literacy.* Numeracy is developed through courses such as research methods and statistics, as well as demonstrating numeracy in projects. Literacy is developed by means of a varied array of assignments you are asked to produce on a degree course, such as essays, reports, presentations.
3. *Computing skills.* These include basic transferable skills such as working using a computer; this does not mean that you have to become a “computer expert”.
4. *Critical and creative thinking.* These skills can be developed through a number of routes – learning how to evaluate literature, presentation and discussion of competing theory and research in seminars, tutorials, as well as essay writing and report writing, and, of course, in the examination assessment.
5. *Problem-solving ability.* On a psychology course the ability to look at a task or problem and make decisions about how best to reach a solution is encouraged across a wide variety of sessions (e.g., laboratory classes, tutorial meetings, personal tutor meetings, etc.).
6. *Decision-making ability.* Making decisions regarding module/unit choices, how to prepare work, and even making decisions within a group setting (e.g., on a joint project) are all course-related skills that are encouraged.
7. *Team work.* Working as part of a team (e.g., on a joint project, or seminar presentation) is actively encouraged on psychology courses, and can lead on to the development of leadership skills.
8. *Organisation and self-discipline.* The ability to organise your study time and discipline yourself to attend learning sessions, work independently, and meet deadlines is actively encouraged when studying for a degree in psychology.



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9. *Self-evaluation.* The ability to judge your own abilities and progression and know where and how improvements in your performance can be achieved is encouraged on a course and specifically dealt with in relevant study skills sessions.

Transferable skills refer to personal skills that can be utilised in situations beyond the course of study a student is taking, such as in a future career. If the student is alerted to these skills at an early enough stage, and actively develops such skills, then transferable personal skills can be of great benefit throughout the rest of her or his life. It is generally accepted that it is these skills that future employers are attracted to when considering graduates for employment. In an increasingly competitive job climate, having these “value-added” skills, as well as having demonstrated your ability to study at degree level, can be of enormous benefit to a graduate.

So, in this sense, all the skills referred to earlier can become transferable skills: oral, visual, and written communication; numeracy and literacy; basic and advanced computing skills; critical and creative thinking; problem-solving ability; confidence and experience in decision-making; working both as part of a team and independently; self-discipline and organisation; self-evaluation; and demonstrating leadership qualities. All of these skills are attractive to future employers and enable a future employer to develop within the recruit, through training, aspects of this skills base that are necessary for a given employ. Many of the academic skills can be developed through formal learning sessions such as practical classes, seminars, tutorials, and (perhaps to a lesser extent) in lectures. These skills are also developed through preparing, compiling, and presenting your work throughout the course. Having said this, it is the student who is ultimately in control in terms of the development of these skills; it is she or he who has to see the importance of the acquisition of such skills. In addition, developing your ability to negotiate, present a persuasive argument, or act diplomatically when necessary, and being able to deal with the “setbacks” one inevitably experiences in life are all qualities that are looked for beyond the degree, e.g., in applied psychology and in the general careers market (see Chapter 8).



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## STUDENT GRADUATENESS

Universities are becoming more and more aware of the notion of “student graduatness” – one definition of which is making the most of your university experience in terms of both academic and extracurricular activities (it should be noted that different opinions exist as to what is the exact nature of “graduatness”). The skills developed on the course have already been discussed, but there is a growing requirement (especially from employers) for graduates to leave their degree with experience beyond the classroom or laboratory. In this sense, graduating from university should be more than just achieving a minimum 2.1 degree classification! By developing a broader range of skills you put yourself in the best possible position to achieve your goals and aspirations after the degree – whether that is within or outside the discipline. Many universities are now moving towards providing the student with a much broader range of experience. For example, there is a move to establish greater links with the business community, charitable organisations and specialist companies, in order to organise work experience or “placements” for students. Some of these will be voluntary in nature and will be “extracurricular” because they do not count towards the degree, but there is an ever-increasing move to embed work experience and placement modules within the curriculum so that a student can gain invaluable experience as a part of their degree and receive module or course credits for the activity.

## DURING YOUR WORK EXPERIENCE

A survey in 2013 by High Fliers Research Limited revealed that 36 per cent of applicants who had completed an internship or some other vacation work with a graduate employer whilst studying, received at least one definite job offer, compared with only 11 per cent who had not had any work experience whilst at university (source: <http://www.highfliers.co.uk/download/UKGCSRelease2013.pdf>). So it appears that gaining work experience whilst studying not only enhances your skills and potential graduatness, it can also increase your chances of employment after completing your degree.

Whilst in your work experience you should make the most of it and emphasise the skills/experiences you have gained from this on your curriculum vitae (CV), as well as on any application form you complete for a job or postgraduate training. Below are some top tips for achieving this, adapted from the



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University of Leeds Careers Centre website:

<http://careerweb.leeds.ac.uk/workexperience>.

1. *Taking the initiative and showing enthusiasm.* Try to project a positive attitude to your work experience; seek out opportunities to gain valuable experiences in a variety of roles. Think of ways in which you can benefit the organisation – offer ideas which might be beneficial to the organisation, such as proposals for new projects.
2. *Flexibility and giving your best.* Get involved with ongoing projects, assist other, more experienced colleagues and help them reach deadlines for their work. This will show that you are able to work on different tasks/projects (flexibility) and show others that you are dedicated to the work with which you are involved (commitment).
3. *Find a mentor.* If you are not assigned a mentor then perhaps ask someone to act as a mentor for you, even if it's unofficial. This can help you to ease into the role, to learn “the ropes” and to get the most out of the work experience.
4. *Network with others.* The general rule of thumb here is that the more people you know the better; perhaps target people who are in the position to help you with your personal and professional development. Forming networks can provide invaluable contacts that can be taken into the future.
5. *Show dynamism within your workplace.* Show that you are highly motivated, enthusiastic, and driven; look for opportunities that arise and make the most of them. Make sure you do a good job when you do get asked to get involved in a project.
6. *Reflect and evaluate.* Reflecting and evaluating what you have acquired in terms of what skills you have developed and what experience you have gained are ongoing tasks. Reflect on what was good and not so good about the role, what your impact has been within the organisation, and how you could improve things in future positions.

Keep a record of the skills and experiences based on your reflections, these can be included in your CV and future job applications; they can also be discussed at any interviews you have. They can help you to think about your future career plans.



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## **GAINING EXPERIENCE WITHIN THE UNIVERSITY**

You can also gain good experience within the psychology department itself. Offering to act as a student representative can provide you with invaluable experience by representing the student body on departmental staff–student meetings where you might be asked to collate student views on individual modules and summarise these at the meeting; or feedback ongoing issues about specific parts of the programme to the tutor or head of department. A student mentor is someone who provides general advice to students who are new to the university – helping them to “ease into” university and understand what it’s like to study on a psychology course. These roles can also lead to paid work within the department, for example, helping out at Open Days where prospective students come along to hear about the course and ask questions about the course/university before deciding whether it’s the university for them. You can also ask to become a student union representative – where you represent the student body at university level (or beyond). For those who are in their second or third year (who have a little more experience in psychology), there may even be opportunities to gain research experience (e.g., over the summer) by working with a member of staff on a specific project. All of these roles bring with them different skills which can enhance your CV.

## **CONTACT TIME**

As a student, your contact time – the amount of time you are required to attend formal academic sessions – will be made up mainly of your attendance at lectures, seminars, and, in some cases, tutorials. The only exception to this is the time spent in practical-related classes.

## **PRACTICAL CLASSES**

For research methods courses on a psychology degree, particularly where the degree is a Bachelor of Science (BSc), practical classes can make up a fairly substantial component of the course. In practical classes you are taken through procedures for conducting literature searches, designing and running studies, analysing the data from those studies, and producing a final report on the research. Statistics lectures will provide you with the necessary theory and formulae to choose the most appropriate statistics for the data you collect and



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analyse in class. The aims of a research methods course are to enable you to learn the basic skills involved in carrying out research, familiarise you with the different approaches to research and link these with relevant statistical analyses and other methods of measurement, to help you to develop report-writing skills, and to provide you with hands-on experience of running experiments and using appropriate laboratory equipment, as well as relevant computer packages. Typically, for practical classes, your contact time will include a lecture component, a laboratory class component, and, in many institutes, a related seminar/tutorial class. The lecture component will provide you with the necessary theory and empirical knowledge; the practical class component will provide you with the practical experience of researching; and the seminar component can be used to provide a forum for discussions related to your whole experience of research methods. The exact organisation of practical classes will vary from institute to institute, and it is therefore difficult to provide guidelines on how best to prepare for such sessions. At the beginning of each research methods course, you should be provided with a timetable for the lectures, practical classes, and (where appropriate) seminars/tutorials. In addition to this, you should be given advice about what preparation you need to do for these sessions. For example, if you were at the “design” stage of research you might be given a lecture on designing experiments, experience in designing an experiment in class, and be asked to come along to the seminar to discuss different types of designs (having first been directed to reading sources). It might be a good idea to ask the research methods tutor at the beginning of the course to explain the exact interrelationship between the different components of the methods course.

The aim of the remainder of this section is to provide guidelines on how best to prepare for and study during lectures, seminars, and tutorials.

## CONTACT TIME GENERALLY

There is an expectation that you attend the majority of all course contact sessions or modules (lectures, tutorials, seminars, etc.). Those students who do not meet this requirement run the risk of having their loan (fees, living costs) withdrawn. The amount of contact time will vary from institute to institute, but contact time on a full-time degree typically ranges from 10 to 16 hours each week, depending on your year of study and the amount of self-directed work there is on the course. You are expected to engage in self-directed study in addition to this: organising lecture and class material, “hitting the library”, preparing for essays and assignments,



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revision sessions, and so on. In general, the amount of class time is reduced as you progress through the course. Thus, at the final-year stage it is highly likely that you will be working more independently than, say, a first-year student. There are a number of reasons for this: for example, the research methods classes are replaced by a self-directed (but supervised) psychology project or dissertation in the final year of an undergraduate degree. The rest of your contact time is likely to be spent attending lectures, practical sessions, seminars, and tutorials. So, what do these sessions involve?

Before going on to look at what these sessions involve and how best to prepare for them, it might be useful to consider two approaches to learning that can be used in such sessions. Over the years these different approaches to learning have been referred to as the *having* or *being mode* of study, or as *passive* and *active learning*, and, more recently, as *deep* and *surface* processing. These approaches can play a crucial role in learning during contact sessions on a degree, as well as for any preparatory work a student does for examinations, etc.

## PASSIVE AND ACTIVE LEARNING

In 1979, Eric Fromm distinguished between those students who were in a *having* mode of study and those who were in a *being* mode of study (a distinction that is still relevant today). The *having* mode is used to describe those who merely obtain a body of knowledge through a relatively passive mode of study: the lecturer imparts a body of knowledge on a subject; the student listens, takes notes, and reproduces part of that body of knowledge for some future event (e.g., an examination). The *being* mode of study refers to where the student becomes actively involved in the material being presented, thinking through the material, making notes of relevant points from the material presented, and posing questions that allow her or him to develop an understanding of the concepts and issues involved in the topic, as well as its relation to other subject matter – for example, how the research/theory compares with other research findings and/or theory in the literature. The mere accumulation of knowledge will not by itself stimulate thought processes, whereas an active participation in the material itself will enable the perceiver to assess critically, analyse, and draw conclusions from that material.

*Active learning*, then, is a skill that should be developed throughout a course of study (e.g., in lectures, seminars, and tutorials) and should be used when carrying out coursework, as well as revision for examinations. When preparing for



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coursework in the form of essays (see Chapter 3) and practical reports (see Chapters 4, 5, and 6), organising the literature in relation to the task can facilitate active processing (i.e., organise the literature around a particular question/topic in an essay, or around the aims of the research project). Also, when revising for examinations (see Chapter 7), organising information taken from the literature can provide a powerful cue for recall. Active study is also about a student using the information in such a way that she or he analyses the information, thinks critically about the information, develops and/or links ideas together from various sources, and presents a critical account of the information in relation to the particular topic, issue, or question being addressed. This is quite different from a passive approach to learning, where a student merely collects information and regurgitates it at some future event (e.g., an examination). A student who develops active learning skills will benefit from this in terms of their ability to organise, remember, and use information picked up on the course, and through their own literature searching.

Current research has shown that using different approaches to learning does lead to different outcomes. Specifically, it has been found that using a deep approach to learning has a more beneficial effect than using a surface approach. These different approaches are summarised below.

A surface approach involves:

- focusing purely on the discrete components of the text (e.g., describe a phenomenon; recall facts)
- memorising and regurgitating information
- forming associations between concepts and facts without reflection
- failing to draw relationships between, or distinguish between, new or previous evidence and argument
- seeing the task as an imposition placed upon you by some external agency (i.e., your tutor).

A deep approach involves:

- focusing on what you think the main argument(s) is in an author's piece of work (or what is required by the tutor setting your work)
- drawing relationships and distinguishing between new ideas and previous literature
- drawing relationships and distinguishing between evidence and argument



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- relating the evidence to everyday life
- organising and structuring the content of a piece of work.

The more adept you become at using an active or deep approach to learning, the more you will come to understand the material you are reading and writing about, and the more of that material you will remember. Also, by using such an approach, your marks and final degree classification can be improved (see e.g., Biggs, 2003; Ramsden, 2003). The first year of an undergraduate degree course can be the ideal time for you to acquire and develop these learning skills. Such skills should be utilised, as much as possible, in all your contact sessions (lectures, practical classes, seminars, tutorials) as well as in on-course assessments.

## LECTURES

During a lecture, you will be presented with a range of materials (e.g., lecture notes, slides, diagrams, etc.) and you are responsible for taking concise, easily understood notes that you can elaborate on at a later date. Some lecturers provide handouts containing the main points about the lecture topic, and, in some cases, a full set of references cited for that lecture. Be sure to ask where the references can be found if you have not been given the full reference source by your tutor (e.g., are they from a particular book or a particular journal article?). Most lectures will be a 1-hour affair, but sometimes you may be asked to attend a 2- or even 3-hour lecture (in which case there is normally a break half-way through the lecture). It is normally left up to the student's own conscience whether to attend a particular lecture. However, if the attendance at lectures is consistently low, the lecturer may decide to take a formal register.

Lectures are seen as an important part of the psychology degree because it is here that you are presented with a framework of the phenomena under study. During this time, relevant theory and research is presented in a concise and coherent form. You should refrain from asking questions during the lecture, but do ask questions outside the lecture venue, in a related seminar or tutorial session. Although lectures may seem like a very one-sided affair (lecturer talking; student listening) students can enthuse a lecturer by appearing interested, alert, and attentive. However, do bear in mind that not all lectures will be fascinating. Very often, what you get out of a lecture depends on not just how it is presented, but how much you enjoy the particular topic under consideration and your own preparation. So, how can one study effectively during lectures? And what



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behaviours should be avoided? What follows is a list of activities likely to occur (on the part of the student) during a lecture, and brief comments as to their likely effectiveness as a learning strategy.

**Copying down lecture notes from the overhead projector or from what is said by the lecturer.** This is often seen as a passive strategy because, although you are getting the information down, you are probably not thinking a great deal about that information.

A much more effective strategy would be to rewrite the information into a form that has more meaning to you, perhaps accompanying each paragraph with a question or two (which you can either use as a basis for questioning the lecturer afterwards, contemplate yourself at a later date, or discuss with fellow students after the lecture).

**Asking the lecturer questions about the topic being considered in the lecture.** This is a very useful and active strategy because when asking questions you become alert and are actively thinking about the subject.

Although a recommended strategy, asking questions during a lecture is usually discouraged by lecturers. Perhaps it would be best to wait until after the lecture has finished. After all, if everybody in a lecture hall containing 100 students wanted to ask questions, there would be little time left to complete the lecture itself!

**Answering the questions posed by the lecturer.** This is seen as an active process because again it requires you to think critically about the topic.

Remember, you are not expected to know all the answers, so even if you find that your answer is not quite accurate, do not be put off answering questions.

**Writing down your own ideas and thoughts on the subject.** This is a very active strategy and is highly recommended during lectures. It will help you to distinguish between lectures and may make a particular lecture more memorable (i.e., it can help with what is known as the consolidation process in memory).

**Asking yourself relevant questions.** Ask yourself the following questions about the material:

1. How does that part of the literature compare with other parts covered?



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2. How can the literature be organised or structured?
3. What is worth noting and what is not?
4. What are the major issues or topics of controversy?
2. Are there problems/limitations with the information presented?

Remember, the main aim of a lecture is to provide you with a framework of the topic under consideration, from which to work. This means that you must spend some time outside the lecture on fleshing out your lecture notes. As you progress through your course, particularly at degree level, you will be expected to search for information sources such as textbooks (sometimes referred to as “secondary sources”) and journal articles (sometimes referred to as “primary sources”) that may fall outside those to which you have been referred in the lecture. You must do this by reading around the literature the lecturer has referred to in the lectures, and summarising relevant theory and research before adding this to your own set of notes. As you progress through your degree, you will be encouraged to look at sources beyond those with which you are provided during contact sessions, i.e., to conduct your own computer or journal search. If you do this as an ongoing task you will find that it makes revision much more manageable, rather than leaving it all until nearer the deadline for the assessment or examination.

Further reading : For further advice on studying in lectures, see, for example, Marshall and Rowland (1998) and Saunders (1994).

## SEMINARS

A seminar can take one of a number of forms. It can be where you as a student are expected to prepare and present some piece of work to the rest of the seminar group. Or, alternatively, it can be where a group discussion ensues about particular phenomena (e.g., a theory, piece of research, etc.), and students are encouraged to provide their own informed opinions about the topic under discussion. The precise format the seminar takes will be determined by the course tutor. A seminar group will usually consist of the lecturer and several students. The number of students in a seminar group can vary, depending on the numbers enrolled on a particular course and the nature of that course. A seminar group will normally consist of the same group of people throughout the whole year and each one typically lasts for about 45 to 50 minutes. The lecturer will provide the initial briefing, during which you should be fully informed about what is expected of you in terms of your preparation



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and the amount of time for which you should aim to speak during the seminar itself. For example, you may be asked to read a chapter from a book, or a journal article, and prepare and present a summary of that piece of work to the seminar group. You will also be expected to handle some questions from the group about the material you have prepared, so make sure you prepare well for such a session.

Quite often there will be ground rules laid down about whether or not you can use visual or audio equipment in support of your presentation, such as slides, or acetates on an overhead projector. Again, your tutor should fully brief the group as to the guidelines and/or ground rules at the beginning of the course. Normally, there will be a number of presenters (i.e., students), each of whom present a summary of a piece of work, the aim of which is to address one part of a topic or question under consideration. Once these presenters have finished group discussion follows, with the lecturer there to guide the seminar through its various stages. If you are at all worried about an impending seminar presentation, or you are not sure how to organise your presentation, the tutor should be willing to meet with you beforehand and provide some guidance.

## PREPARING FOR THE SEMINAR

As stated earlier, your tutor will provide you with a full briefing sheet and/or explain to you what you are required to do for the seminar. The briefing (written or oral) should (ideally) tell you what question or topic is to be addressed in the seminar; what your contribution is expected to be; which piece of work you are expected to consult and summarise; and for how long you are expected to talk. Advice on actually preparing for the seminar can be provided by the tutor on request.

Once you know what the topic is and you know what material you need to access, start preparing sooner rather than later by collecting the information from books and journal articles well in advance of the seminar. Read the material and make brief notes about the main points of the information, always trying to relate it to the question set in the seminar briefing (or topic to be addressed). DO NOT prepare exhaustive notes that amount to a rewrite of the whole material: this is not what the seminar is about and will not look good on the day. Your fellow students and the tutor will not appreciate your sitting there reading several notebooks on the topic! If you feel happier, and the facilities are available to you, use some visual aid such as an overhead projector, but make sure the notes you place on the acetates are brief and contain the salient points only (assuming that



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your tutor agrees to this). Many people like using visual aids because they take the attention away from them (the presenter) and onto the projected image, therefore reducing the anxiety of having several people watching their every move. If you do use transparencies, make sure they are clear and that you do not put too much information onto one transparency. Also, make sure they are legible. Using handouts is also a good way of diverting attention and can actually help the other students by allowing them to think about the subject rather than hurrying to take down notes about what the presenter is saying. Handouts also provide permanent reminders of the information discussed in seminars. Remember, it is possible that the material you cover in seminars will be part of the assessment (e.g., the final examination); you might wish to check this point with your tutor.

Perhaps the most daunting part of the seminar process is when you are asked questions on the topic, either from your tutor or your fellow students. Most students, of course, will not be looking to ask too difficult a question – after all, they will have to take their turn as presenter! If you are asked a question, take your time, think for a moment, perhaps repeat the question (it gives you more thinking time), and try to make some informed answer. Remember, psychology is ultimately to do with human experiences, so even if you forget all the grand theories, you should be able to come up with something from your own past experience (but this is not as good as providing an informed answer based on the literature). If you really haven't a clue what the answer might be, admit it and ask if others might make a contribution.

In some institutions attendance at seminars will be monitored by the tutor taking a register, in others it may not. In most cases you will be asked to present perhaps only once or twice throughout the particular course (or module), such as an Introduction to Psychology course in your first year – *but you are expected to attend all seminar sessions*. In some institutes seminar presentations are marked and contribute to your overall assessment on a particular course.

## WHY BOTHER WITH SEMINARS?

Presenting to small groups is a very useful skill to develop, not just because it is part of your learning experience, but because it has a great deal of relevance to other aspects of your life. So what are the uses of seminar presentations?

**Presenting at conference.** Some of you (e.g., in your final year of study) may go on to present your work at a conference. Indeed, there are a number of undergraduate



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conferences that take place each year to which you could be invited to present a summary of your final-year project/ dissertation. Presenting your work at a conference will enable you to gain respect in your particular field and have your work published in conference proceedings. Conferences are good places to impress other people in your field, so presenting your work at a conference can be a good way of networking. It also looks good on your CV.

**Improves your social skills.** Developing the skill of presenting to small groups can help to overcome the nerves many people experience when discussing things with a group of individuals who are familiar with the topic. The more you learn to control those nerves in a group discussion setting, the easier it becomes.

**It can be good practice for job interviews.** Presenting at a seminar can be very good practice for performing at a job interview. The interview is somewhat like a seminar in that you will be asked questions about material you have prepared (i.e., your CV or application form) by a number of people. You will be expected to present a concise and coherent argument as to why you are best suited for that job. The more practised you are at seminar presentation, the better you will come across at interviews.

Some don'ts in relation to seminars:

- Don't panic! Most academic institutes will have an adviser who can provide guidance on how to control panic.
- Don't leave the preparation for a seminar until the last minute.
- Don't rush things; take the time needed to get the information across clearly in the seminar.
- Don't just miss the seminar. This will not only annoy your tutor, but will cause problems for the rest of the seminar group (you'll probably be asked to present another one in its place).

It would be wrong to try to make out here that seminars are easy to do. They can (as indeed tutorials can) be a somewhat daunting experience. However, nobody is out to make the student look a fool, or induce any unnecessary angst, so do not act as though you were going before a firing squad. Prepare well, accept that you don't know all the answers, and deal with the situation. Seminars can play a very important part in the learning process (if they are organised correctly), and they do get easier with practice.



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## TUTORIALS

A tutorial is typically an event where a small group of students and the lecturer get together, or sometimes a single student meets the lecturer on a one-to-one basis. The main aim of a tutorial is to offer the student the opportunity to follow up material covered in the related lecture course and to ask the lecturer questions relating to that material. A tutorial can provide the student with the ideal opportunity to ask the lecturer to clarify theory, research, or general points about the topic under consideration, rather than trying to pin the lecturer down outside formal contact time. Where you have a very busy lecturer, such as a professor who spends a lot of her or his time preparing for publications, or attending conferences or busy meetings, a tutorial may be the only chance for you to question her or him at any length.

So the tutorial differs from the lecture in that you are not just one of a large lecture audience listening to the lecturer expounding views on a particular topic, nor is it like a seminar where you are expected to prepare and present some piece of work. But you are expected to come to a tutorial prepared to question and to make active, spoken contributions (the same expectation applies to the lecturer). With ever-increasing numbers of students in further and higher education, tutorials can tend to get a little large in their numbers. However, this format still provides you with the opportunity to ask questions about the topic and engage in discussion.

Another problem arising from the large numbers might be a situation where a part-time lecturer is hired to take some of the extra tutorial (or seminar) load away from the course tutor. When this happens it can sometimes be a little off-putting for students having to question one lecturer about material presented by another lecturer. If this happens, do not be put off; the lecturer who takes the tutorial, or seminar, should be familiar with the area or be fully briefed by the main lecturer running the course and presenting the lectures. One major problem students have with tutorials (and with seminars) is their feeling that, because they are not experts in the field, they are afraid of looking stupid in front of the lecturer and other students if they get the information wrong, or have to admit that there is something they are not sure about. Tutors are fully aware of this and know that even the brightest of students sometimes find it very difficult to master new material (after all, your tutor will have had to learn the material in a similar way!). So do not be put off asking questions you think are relevant, or offering what you think are useful contributions to the tutorial (or seminar). In fact, your fellow



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students will probably be silently thanking you for asking a question that they were too afraid to ask!

## SOME FINAL POINTS ABOUT SEMINARS AND TUTORIALS

In some institutes of higher education, seminar and tutorial work is marked and may contribute towards your final grade, whereas in others it is not marked – a point that is worth checking with the relevant course tutor. It is felt that attending and contributing to seminars and tutorials will help you develop learning skills that cannot be acquired in the traditional lecture setting, and will therefore help you to improve your performance in your coursework (and examinations).

Taken together, seminars and tutorials will help you to:

- clarify ideas and literature that you have not understood
- evaluate material by looking at different viewpoints
- summarise the material (e.g., a journal article) into a manageable form
- relate the information you (and your fellow students) have read to the specific question/topic under consideration
- express yourself clearly and coherently when taking part in discussions
- discuss related topics not necessarily covered in lectures, such as applied aspects or everyday aspects of the phenomena.

Developing these skills can help enormously on the course. In particular they can *help you to develop the type of critical thinking necessary to become an active learner and promote deep processing*. If you are able to develop such skills, you should find that your coursework – be it an evaluative essay, a critical appraisal of a piece of research, or your performance in a final examination – should all benefit from this. Developing and enhancing these skills in the first year of study can have a positive effect on the two subsequent years that typically make up the bulk of an undergraduate degree in psychology; and remember, in most institutes it is Years 2 and 3 that determine your final degree classification. These skills are not only crucial for studying for your degree, but will also help in your personal development. So, make the most of your contact time.

Further reading : For preparing for and studying during seminars and tutorials, see, for example, Marshall and Rowland (1998) and Saunders (1994).



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## EFFECTIVE NOTE TAKING

Note taking is a skill that you are likely to use during lectures, seminars, and perhaps even tutorials. In addition, note taking can form an important part in preparing for a written essay (see Chapter 3), preparing the groundwork for writing an empirical report (see Chapter 6), and as part of the revision process for exams (see Chapter 7). When studying at college and university level, often you are expected to look at what you are studying in greater depth and more critically than at any other stage of your education. Becoming more effective in your note-taking skills can only enhance your learning and improve the final product – your coursework and examination work. So what are the key aspects of effective note taking? *Effective note taking involves making informative, brief, accurate, clear summaries of the information you are listening to, or reading about.* In order to develop effective note-taking skills you need to: *identify* what purpose the notes will serve, be selective in what you record, and use an *effective* method for recording the notes.

At college and university level it is generally expected that the student progresses from pure detail (e.g., recording and retrieving mechanical details of something, such as a theory), to showing knowledge (and detail) and understanding of the topic. The latter is achieved by posing questions about the phenomenon under consideration, looking at alternative ideas, assessing validity, and so on. These skills develop over time, but are available to all students who are willing to spend some time trying to understand the material to which they are referred.

## IDENTIFY THE PURPOSE FOR THE NOTE TAKING

By identifying what purpose the notes will be used for, it is possible to identify what type of notes should be taken. If you are taking notes for an impending assignment (such as an essay or practical) then the notes need to: accurately depict the relevant theory and/or research related to the topic under study, provide a format that can be used to help structure the assignment, and provide good supporting references related to the topic. In addition, good critical/discussion points can also be added to these notes (e.g., How does the theory/research compare with other competing theory/research? Are there any flaws in terms of the evidence/arguments in the literature presented? Are there any logical extensions to the theory/research, etc.?). If the notes are for revision purposes, for



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say, an impending examination, then they should contain the main points related to that topic, should be structured, should be accurate, and should include supporting references. In addition, the notes should be in a form that can be easily understood by the student after some time has elapsed. Various techniques can then be used to enhance your learning of the information before the examination itself (see Chapter 7).

## BEING SELECTIVE IN YOUR NOTE TAKING

Being selective in what you record in your notes means that your notes can focus on the main points of the lecture material (or seminar or revision material) and deciding what can be omitted. On the one hand you do not want to end up with a verbatim account of what has been said during the session (indeed, this would be difficult to achieve), whereas, at the other extreme, your notes should not be so patchy and omit so much detail that you find it difficult to make sense of them at revision time. As pointed out by Drew and Bingham (1997) it can help you if you think about three categories of information when taking notes. *First*, you need to consider what main principles, concepts, theory(ies), and arguments are postulated in the literature. *Second*, you need to take sufficiently detailed notes of these components so that you can understand key principles/arguments/theory(ies) afterwards, or can follow up important sources. *Third*, you can add your own questions to the notes – this will enable you to evaluate the material and be critical of that literature.

For example, if you were taking notes on Sigmund Freud's theory of the personality you would need to include in your notes:

1. What ideas/principles/concepts underpin the theory, and what the essential components and/or stages of the theory were.
2. What the main line of argument is with regards to Freud's theory, and what supporting evidence there is for the theory (including noting key texts and research).
3. What conclusions can be drawn from the literature presented, what contradictory evidence there is, and judge how accurate (and/or applicable to the real world) the theory appears to be.

As stated earlier, as a student progresses from their first through to their final year on a psychology course, better grades can be achieved by showing



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evidence of understanding underlying principles, concepts, and arguments, and by being able to criticise the literature. Being selective in what you record as notes is critical to this process.

## RECORDING YOUR NOTES

How you choose to record the notes should be partly determined by how you intend to use them. What this means is that the format the notes take should fit the purpose. If you wish to remember the basic facts and main points of argument about a particular theory, then perhaps a brief sketch of these components in the form of a set of linear notes would be helpful. Linear note taking basically refers to where you break down lengthy sentences (either from a lecture or from a piece of written work) into a more manageable form. For example, the theory of working memory could be broken down as follows:

- *Title of theory:* Working Memory.
- *Key references:* Baddeley and Hitch (1974), Baddeley (1997), Baddeley et al., 2015, Eysenck and Keane (2015), Logie (1999; 2014), Parkin (1993), Smyth and Scholey (1994).
- *Components of model:* Central Executive – responsible for incoming information from a range of sensory modalities, redirecting that information to the other sub-slave systems, and maybe involved in control processes within the sub-slave systems; Articulatory Loop – responsible for storage and maintenance of auditory and verbal information (e.g., sounds and words), comprised of a phonological loop system (for passive storage of information) and active rehearsal processes; Visuo-spatial Sketch Pad – responsible for storage and maintenance of visual and spatial information (e.g., static images and movement), may have the ability to redraw images as a form of “visual rehearsal”.
- *Effects associated with model:* Phonological similarity effect reflects passive storage in loop system; word length effect reflects active rehearsal in loop system; visual similarity effect reflects passive storage in sketchpad system; dynamic visual interference reflects active process in sketchpad system.
- *Validity of model:* Model explains effects outlined previously; much research in support of components of model; applications of model include: developmental applications, neuropsychology (e.g., amnesia),



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everyday tasks (e.g., playing games such as chess, finding your way around in the dark), and applied aspects (e.g., reading, and writing). Shortcomings of model.

- *Conclusions:* Model is robust, useful in applied terms, and provides a useful theory of short-term memory.

Such linear note taking is helpful because it contains clear headings, subheadings, and so on. The notes also contain the key words, phrases, references, and explanations needed to summarise the topic. They could have been improved by using simple techniques such as underlining, circling, boxes, or forming a distinct pattern to them (such as a visual diagram of how the notes interrelate, perhaps even using arrows to signify the interrelationships).

## GETTING THE MOST FROM YOUR LECTURER

Note taking in class can be aided by asking your lecturer (before the class has started) to: explain the aims of the lecture, explain what information will be covered in class and in what order, indicate important aspects of the material, be willing to explain key areas that you do not understand, provide key reference sources in sufficient detail for them to be traced, and pace her- or himself so that there is time for notes to be taken.

## TAKING NOTES WITHIN THE LECTURE

Within a lecture, when you need to be attentive and think about what is being presented, elaborate note taking might not be possible. It may be more effective for you to take brief notes about the main information provided by the lecturer: for example, noting key terms, basic details, names of researchers, and critical points about the topic, then writing these notes up more fully after the lecture would be a good strategy.

By doing this you will allow yourself enough time in the actual lecture to think about the topic critically, as well as having the necessary information (in note form) so that you can elaborate upon these notes at a later date. It might be a good idea to elaborate upon the notes sooner rather than later after the lecture. In addition to this, you can also summarise related material using the procedures outlined in this chapter and adding these summaries to your notes. Rewriting and expanding upon lecture notes (and notes from other sessions, e.g., seminars, your



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own research) can be an effective way of consolidating the material.

## FINALLY

Write notes in your own words and adapt the method to suit your own particular needs – what you feel most comfortable with. Review your notes periodically, updating, highlighting, and expanding, where necessary. Make sure you organise your notes effectively, so that you can retrieve them easily when they are needed – perhaps place them in an A4 file under the course title, with headings, titles, and dates. Organising revision notes early (whether they be for coursework or examination preparation) can save you time later and help overcome the angst some people experience when deadlines are approaching.

## REFERENCE MATERIALS

When studying on a psychology course, a range of reference source material is encountered. The main types of material used as reference sources are books and published research papers. As the student progresses through the years on a course, particularly at undergraduate level, she or he will be expected to read and report on selected books and papers. These sources provide descriptions and explanations of major theory and research in psychology, and can provide the impetus for further thinking and research in the area. The three most common forms are empirical reports, theoretical papers, and literature reviews.

## EMPIRICAL REPORTS

These are reports on pieces of research that are either entirely original or have original components in them. Such reports are relatively concise, are to the point, and are subsectioned into the areas outlined in Chapter 6 of this book on report writing. Empirical reports are very important in that they enable researchers to test the assumptions derived from a theory or model in psychology, compare methodologies, and can ultimately extend our knowledge of psychological phenomena. See, as an example, Heffernan, Moss, and Ling (2002) or Hitch, Halliday, Schaafstal, and Heffernan (1991).



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## THEORETICAL PAPERS

Theoretical papers are those that typically review the published literature on a particular psychological model or theory, and attempt to evaluate and advance our understanding of that theory. Typically the author of the paper begins by stating what theoretical problem is to be addressed, and will summarise the theoretical contributions made by various previous authors. The author might then go on to discuss any shortcomings of current theoretical thinking on the subject matter and may suggest how the theory might be changed or advanced – to account for discrepancies between the theory and current thinking or empirical research. For example, Jean Piaget's theory of cognitive development has undergone a number of changes over the years due to alternative theoretical thinking and empirical results that are inconsistent with his original thesis. It is now accepted, for example, that social context and cultural factors play important roles in cognitive development. For example, Doise's 1990 paper reviews evidence of how social factors can intervene in cognitive development in children.

## LITERATURE REVIEWS

Literature review papers often focus on a particular psychological phenomenon and summarise what is known about that particular phenomenon. In such a paper, previously published research will be summarised and presented (usually) in chronological order. Comparisons of old and new evidence are made and the author will attempt to establish how new ideas have acted to change or extend our view of the topic under consideration. The paper itself may be subsectioned into discrete parts: for example, a review of literature up to a certain time, contemporary literature, current thinking; or, laboratory studies, field studies, combined approaches. For example, the Heffernan (2008) article reviews the research on excessive alcohol consumption and its impact upon prospective memory up to that date.

To some extent books, like those used as references sources on a psychology course, can also be included in one of the previous categories. General textbooks provide a review of the main theories and research in psychology. For example, Smith et al. (2003) provide comprehensive coverage of all the major areas of study within psychology, with at least one chapter devoted to each of these areas. On the other hand, more advanced texts can review literature about a particular psychological phenomenon and theories and/or present empirical



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evidence that is used to evaluate the phenomenon. For example Baddeley, Eysenck, and Anderson's (2015) excellent book *Memory* reviews the literature on memory, proposes a model of short-term memory, and evaluates this in light of historical and contemporary findings.

## SUMMARISING A PIECE OF WORK

Being able to summarise a piece of work (e.g., a journal article) can be the key to effective study and revision. Summarising a piece of work can be broken down into a number of components. This is a useful process and forms the basis for the following list of details that should be included in a good review.

- Begin the summary with sufficient bibliographic information – a formal reference of the work being summarised. This will allow you to clearly identify the source of the work and will be useful when compiling a reference section. For example:

Heffernan, T.M. (2008). The impact of excessive alcohol use on prospective memory: A brief review. *Current Drug Abuse Reviews*, 1, 36–41.

- The major hypothesis(es) or question(s) posed by the study: you need to be clear and specific about this. Record the formal hypothesis/question posed by the author and, if you wish, include your own interpretation.
- What method of investigation was adopted. Identify whether the study was predominantly qualitative or quantitative. Note what mode of observation was used in the study, e.g., interviews, questionnaires, experimental manipulation (if so, what conditions were created in the experiment?), a field study, etc.
- List the major variables or factors, with a brief description of each one. Include here the dependent, independent, and control variables (see Chapter 4 for more details).
- The participant sample. Define the sample in terms of age, sex, type of sample (e.g., random sample, chosen for a particular reason, stratified sample), other details which might be important (e.g., social status, job status, etc.).
- The findings drawn from the study. List here the main results and significance levels. Provide statements about whether the results support



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the hypothesis(es)/question(s) posed in the introductory section of the report. Be brief.

- The conclusions reached by the author. Note what evaluations the author has made with regard to how the findings can be interpreted, what implications these might have for future studies, and any shortcomings about the study.
- Note your own comments on the report. You may wish to make comparisons between this and other reports you have read. Or perhaps you can think of your own criticisms or shortcomings about the report. For example, can one infer a cause-and-effect relationship between the independent and dependent variables? Use this space to make additional notes of your own. Questioning and evaluating pieces of work are essential components in the progression to the “deep processing” referred to earlier in the chapter.

You might organise your reviews in chronological order or in a topic-based order. For most essays and practical reports, one typically reads and reviews reports for a particular topic (e.g., memory).

Finally, remember to be somewhat selective in what you review, say, for an assignment, you don't have to feel the need to read an exhaustive amount of literature for a particular topic. Often, a good review of a topic can be worth several empirical articles on that topic.

Effective note taking and the effective reviewing of materials referred to on a psychology course can be the key to performing well in course and examination work.

## SUPPORT FOR LEARNING

The majority of psychology degrees are now underpinned by a number of support systems to help the student in their learning and progression. Programme delivery should be supported by an e-learning portal (e.g., the so-called “Blackboard” system) which is a tool that allows the tutor to add resources that students can access online – useful if you have missed a lecture or class or want to revise outside the formal teaching time – and that can be accessed within the university or externally. Module descriptors, lecture notes, key references, examination and assignment information, PowerPoint presentations, video and audio presentations and other applications can all be added to this site. The site also has an interactive



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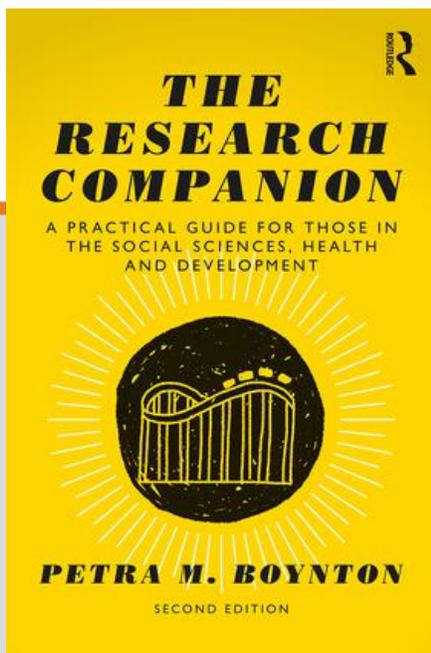
“discussion board” which allows students to share information or ask questions online (anonymously if they prefer) to which other students or the tutor can respond. Most universities will subscribe to “Turnitin” which is an Internet-based service that allows students to submit essays, empirical reports, and other assignments in order to check the amount of similarity between their work and other published work. The Turnitin system allows you to reduce the amount of similarity in your assignment before formally submitting the work, thereby avoiding plagiarism (see Chapter 3 for more consideration of plagiarism). You should check exactly how Turnitin is used within your psychology department – is it a tool provided purely so that students can access and alter their work accordingly before submitting that work, or is it used as a “policing” tool to spot and punish plagiarism! You may also wish to ask whether Turnitin is compulsory or voluntary. Personal guidance support is a system whereby each student is assigned a tutor with whom they can meet regularly to discuss their progress through the degree and any major difficulties the student is experiencing; the tutor can advise a student on a particular issue or refer them on to specialist help and advice within the university. A student may even be encouraged to monitor their own progression and achievement throughout the degree in order to gain an overall view of what skills they have developed and reflect on where improvements can be made. Many universities also offer a “buddy system” whereby a more senior student is available for generic advice that can be offered to new students who might experience difficulties when first coming to university or college. Finally, each department should have a student support and advice centre where students can go for general advice, as well as year tutors, programme leaders, and a student well-being centre for extra support if needed.



CHAPTER

2

# PLANNING RESEARCH



This chapter is excerpted from

*The Research Companion: A practical guide for those in the social sciences, health and development, 2<sup>nd</sup> Edition*

by Petra M. Boynton.

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# PLANNING RESEARCH

Excerpted from *The Research Companion*

Research is generally presented to us in a “backwards” format: that is, we see the end result first. This means research published in reports or journals may not always tell the whole research story. While they give us a “finished product”, we’re discouraged from thinking about how the research was created or conducted (Slife and Christensen, 2013; Woolgar, 1996). Planning is probably the most important aspect of any study, but is frequently hurried or overlooked. Yet if we miss these key skills we may never get to see our work published. Our findings may not be implemented or sustained, and time and money may be wasted. Or, equally worryingly, work that was poorly designed with inaccurate outcomes might be adopted when it should have been discarded. This chapter will cover the issues and questions that will form the focus of a project or study, including:

- Considering theoretical perspectives and epistemological standpoints
- The needs of participants/researchers (and what your work represents to diverse groups)
- Literature searches
- Research questions
- Possible methods to be used
- Analysis (qualitative/quantitative)
- Purpose, scale, and proposed end result of research
- Making research plans and stakeholder analysis
- The needs of participants/researchers
- What support is available to complete a study
- Making links and partnerships
- Budgets and funding sources.

These issues all need consideration, but different studies at different levels will also have different requirements. The above factors don’t apply to all research projects (for example, if you are carrying out a student project you may not need to think about budgets).

## WHAT LIES BEHIND YOUR RESEARCH

I get frustrated when I see research methods taught via a whistle-stop introduction to a few method choices before swiftly getting on with data collection, leaving little time or opportunity to consider where the ideas behind the methods and approaches we are choosing and using come from, and how they



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in turn impact on our work. Alternatively, teaching that puts a lot of emphasis on complex philosophical, theoretical and pedagogical ideas can seem intimidating, off-putting or confusing to some learners.

Both of these approaches can be problematic. If you do not have a sense of where your research is coming from and how that may affect your work at all levels, then it will be difficult to truly engage with your method—to critique and adapt it. It also means you are learning about methods in a “context-free zone” so you may not discover where others have tried to explain, question, make use of or discard particular standpoints and approaches (Nind, Kilburn & Luff, 2015). Alternatively if you have signed up to “do research” and are spending time on complicated ideas and frameworks you may be frustrated about how this is stopping you getting going with your planned work, particularly if there is no obvious connection between what you are learning and how it underpins what it is you would like to do, or if you have a limited timeframe or budget with which to get research finished.

If you are studying health, social science or development at degree level or higher, learning about the theories and philosophies behind your discipline is likely to be part of your course. However it may be you are not taught—or do not make the connection—that these relate to the methods you will be invited to choose from when undertaking a research dissertation. Readers of this book who have not had a college education or are peer researchers/volunteers on projects may not have formally encountered this area at all. Terminologies and complex theories that explain epistemological, theoretical and philosophical underpinnings of the social sciences, health and development can be inaccessible and intimidating. This last sentence, for example, may make perfect sense to you—or might be incomprehensible.

It is useful to have a sense of what is behind the work you are doing for a number of reasons. It helps you place your work within a wider social, cultural and historical context. It allows you to draw on pre-existing ideas and frameworks to bolster your arguments and explain your ideas. It also serves as a point of disruption, challenge, and reimagining—given many of the philosophical and theoretical ideas underlying the social sciences, health and development are Eurocentric and Westernised, privileging particular worldviews, social classes, and ways of thinking and presenting—predominantly engineered by White, affluent, educated, men (Smith, 2012; Guthrie, 2003; De Schauwer & Van Hove, 2011). A way of both engaging and reclaiming philosophical and theoretical approaches is to consider who they bring in and leave out, what they represent, and how we might



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do them differently—returning us to the “take it, break it, and remake it” approach introduced at the end of the last chapter.

## Exercise: Terminology Hunt

Either alone or with colleagues note down what the words listed below mean to you. Where have you seen them used in your work/practice? There may be some words you are not sure about, ones you find confusing, or some you may never have encountered before.

*Theory, Epistemology, Philosophy, Framework, Ideology, Ontology, Paradigm, Knowledge, Empiricism, Idealism, Rationalism, Constructivism, Pragmatism, Interpretive, Method.*

You can ask others what they think the words mean or search the Internet for clues. More in-depth answers and explanations can be found in the following texts:

*Sociology in pictures: Theories and concepts*, Michael Haralambos (2013), Collins.

*Theoretical approaches in psychology*, Matt Jarvis (2000), Routledge.  
*Philosophy of social science: The philosophical foundations of social thought*, Ted Benton and Ian Craib (2010), Palgrave Macmillan.

*The foundations of social research: Meaning and perspective in the research process*, Michael J. Crotty (1998), Sage.

*Philosophy of social science (4th ed.)*, Alexander Rosenberg (2012), Westview Press.  
*The philosophy of social science reader*, Francesco Guala and Daniel Steel (2010), Routledge.

*Epistemology: A beginner's guide*, Robert M. Martin (2010), Oneworld.

Or you may wish to visit The Pedagogy of Methodological Learning for more applied and practical discussions of theories and philosophies underlying our work: <http://pedagogy.ncrm.ac.uk>

Having identified definitions for these concepts, you may want to consider how they apply to your own research, your choice of method, and particularly how they make sense within your culture or community. How do these concepts translate—what sense do they make for the people and places where you'll be working?



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Finally, having completed your hunt you may want to make your own “Terminology Bingo” card, including some or all of the words listed above. You can use that to play along with other social science, health and development papers or books you are reading; or to liven up any conferences or talks you might be attending.

## DIFFERENT WAYS TO PLAN YOUR RESEARCH

“Planning research” is one of those statements that seems intuitive. Surely everyone knows what it must mean. Of course! It means thinking about what you want to do and maybe making a list of how you will do it. Yes? Well, not quite. For some projects you may be okay at the outset having an idea of what you plan on doing and a sketch of how you will make that happen. Alternatively, for other work, particularly if you are seeking funding, you may need a lot of detail within a proposal about what you intend to do—and the steps you will take to ensure that happens.

There are various techniques for planning your research journey from here (your starting idea) to there (whatever finished result you will be required to create) and vice versa. Thinking about what it is you want and need to do, where your work will happen, why you want to do it, who you will be working with, along with your final product(s) are useful anchors to attach key tasks to. You could use existing plans for research on similar topics other people have set out previously (perhaps in your organisation or department). Or you may wish to make a list or spreadsheet of the different tasks you need to undertake.

Alternatively you may want to use Post-it notes to set out all the different tasks needed to achieve every stage of your work. Stick Post-its on a large table or wall space, involving other colleagues in this activity if your project has multiple partners. This might be something you create as an opening part of a project and return to throughout the life course of a study. Having Post-its or cards containing a breakdown of a project can help identify if you are skipping over important issues that do not interest you or fall outside your skillset or responsibilities. When I used this approach recently I found that where I made notes on participants, recruitment, engagement, research tools, data entry and final modes of presenting work I was very detailed and listed a lot of activities I knew needed to be done. But within this activity I also had one-off notes saying things like “finance” and “analysis” which failed to break down all the steps in these areas of the project. In the former case I wasn’t sure what was required regarding the financial management



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of the project, but was able to ask my colleague who would be doing that work to alert me to what they needed doing, which in turn allowed me to plan the study time more effectively around funding deadlines and availability. Meanwhile my avoidance of analysis was pure laziness as I was more interested in working with participants than making sense of what they would be telling me. It was a useful reminder to expand and fully plan for just how much work would be needed to analyse the data, and to book a refresher course in analysis to help me do it more effectively. All of which had to be reflected in the overall study schedule.

A more creative way of planning is to storyboard your work, as you would see done within television programmes, films, or advertising campaigns. Here you would draw out the different “scenes” of your work—either in terms of the life of a study or honing in on a particular area, such as recruitment, community participation or analysing the data—to help you pull out a clearer picture of what needs to happen within your research or what might be done with your work. Alternatively you could draw maps, diagrams, mind-maps, pathways, doodles or use other visual thinking strategies to represent the path your research could take. Other recommendations from colleagues include using chalk to draw on blackboards or concrete floors to capture what you need to get done. The same can be tried using pens on whiteboards, windows or glass; or drawing in the sand or earth using fingers or sticks. Taking films, photographs or notes of what you create will enable you to remember visual plans. These approaches may be particularly useful when there is a group of you conducting research; or if you need ways to ensure diverse groups, younger audiences, those who have literacy or learning difficulties, or speak different languages, can participate in the planning. Visual depictions of a research journey may be clearer and more engaging in these cases.

Whatever approach you use, reflect on (and include) where you might need more time, help, resources, assistance or critical friends to keep you on track or on message. Pragmatically you do not want this planning to either become a distraction or act as a means of procrastination; or to hold up your work if having to learn to storyboard, map or draw is going to eat into your project time. Ensuring you have a sense of purpose and planning and know all the details of what you need to do will help you keep to time and ensure core issues are not skipped or missed. Moreover, having planned out your work in a list, table or other visual format, you can share it with others to see if they can spot anything you have omitted or make suggestions on how you could change, improve or enhance your planned work. This in turn might help you avoid reinventing the wheel if you spot



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areas where you can use existing tools, approaches or frameworks—or highlight if you are being over- (or under-) ambitious. You may recognise there are parts of the planned work you will not have the time, skills or ability to achieve; meaning you can either drop this (always noting and justifying why) or delegate to colleagues/staff (if appropriate).

Finally, having a plan also gives you a much clearer sense of what your end points need to be. As we saw in Chapter 1, there are many ways to do “research” and what we consider “research” to be may vary among people, cultures, communities and disciplines. As we tend to teach research in a format that suggests the “end point” is either a dissertation, report or peer-reviewed publication it can leave those doing work that does not fit said formats assuming either they are not doing research or that their work is not valuable. It can also force people to push their work into unhelpful directions. Not everything can, or should, end up in an academic journal. By mapping out and visualising your research you may realise what you should be doing with your findings is presenting them to the local health board; or doing a workshop based on your findings with the community you did the research with; or documenting your whole project as a film, cartoon or photo essay. Or maybe creating a variety of outputs based on diverse audience need. Chapter 8 covers this in more detail but thinking right from the beginning about where you want to go and how you will get there is vital. Just as it is to keep an open approach to allow your research, ideas and practices to change as necessary; based on numerous factors that even the most meticulous planning may not anticipate.

## FURTHER HELP

George Huba’s Mind Mapping Resources: <https://hubaisms.com>

InformationTamers: [www.informationtamers.com/WikIT/index.php?title=Main\\_Page](http://www.informationtamers.com/WikIT/index.php?title=Main_Page)

Dan Roam (author of *Back of the Napkin*, 2009, Portfolio), has free downloadable visual thinking tools you can use or adapt for your own work:

[www.danroam.com/tools/](http://www.danroam.com/tools/)

Writing for Research guide to storyboarding:

<https://medium.com/advice-and-help-in-authoring-a-phd-or-non-fiction/story-boarding-research-b430cebd5ccd>

London School of Economics’ blog explains diverse ways in which storyboarding can be used in research: <http://blogs.lse.ac.uk/impactofsocialsciences/2014/10/31/storyboarding-research-dunleavy/>



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## THINKING ABOUT YOUR RESEARCH QUESTIONS

In the previous chapter, we looked at the idea of thinking about your role in research in terms of your skills, and what research could do for you. Before considering research questions themselves, it's also worth thinking about why you need to complete a study (see Denscombe, 2014).

### Exercise: Why are you doing this?

Take a moment to think about yourself in relation to research. Why you do it—and how you feel about it. It may help to look back over the researcher skills and abilities checklist (Table 1.2) you completed in the previous chapter. Is it because you:

- Have to do it? For example you have to complete a study for your dissertation, or as part of your job.
- Want to do it? This may include because you find people or a subject area interesting, or perhaps you want to increase your existing skills, or want to do a study because it might be fun or enjoyable.
- Need to do it? Maybe there's a social issue that's important to you, or you feel needs to be addressed urgently; perhaps there's a problem that needs explaining or sorting out that research could help with.

You may find that you identify with one of the categories above, or perhaps a mixture of them. Think about this list and see what reasons resonate with you—either that you agree with, or that you feel don't match your idea of research. Then on a blank sheet of paper write "I am a researcher because . . ." and note down as many reasons or explanations as spring to mind. You may want to keep this record, because as your research career progresses, your reasons may alter. The point of this exercise isn't to create a fixed researcher identity—it's to start you thinking "why am I doing this?" During research we should consider our motives all the time, and sometimes question why we're doing the work at all. Rather than seeing it as an unrelated idea, or an anguished cry when things go badly, you should continue to question who you are, and what is going on.



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Once you've focused on why you need to do your study, the next step is to think about a clear rationale for your work. Thinking about why an issue requires assessment can keep you focused on your study question. Work will be difficult if you don't have a clear focus on what you want to ask. However, you need to be flexible. If you are completing action research or ethnography, you won't be beginning a study with a fixed hypothesis or idea—instead you'll be thinking around a broad area you wish to investigate and adapt as you go along—something a colleague told me can feel to them like “building our ship as we sail it”. If you are completing an experiment, trial or evaluation you may have a highly specific question you wish to answer and your work from the planning stages onwards will need to fit very precise targets.

*Some studies I've supervised haven't worked out simply because the person doing the research wasn't clear about what they wanted to do. Having a vague idea, or often far too many, means that the research may get done, but it also may not tell us very much. (Clive, tutor)*

Set aside protected time to reflect on exactly what it is you want to find out with your research. Keep your question as simple as possible—avoid having lots of different things you want to ask. Instead, condense your thoughts down to a clear idea. If you have a specific question it will help you consider how best to go about answering it. Frequently problems arise in research because the question was too broad, confused, or perhaps not very original (a good idea, but something someone else had already answered). Don't feel that your question has to be carved in stone, or even sound very formal, in the early stages of a study. As you move through your literature searching and designing your study, you may find that your original question alters. That's fine—problems are more likely to arise if you: start with one idea but get muddled and research something else; have an initial research question but switch or alter it so more favourable outcomes make your final reporting look good; or lose track of your original question part of the way through a study.

Chapter 3 focuses on ethics in more depth, but right now you can note the ethics of how you construct research questions. Difficulties may arise if:

- Your questions are unfocused so you waste the time of participants or others associated with your research



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- You overstate or over-promise what your research question can realistically deliver
- The way you phrase your question or the topic you've decided to interrogate upsets or harms participants/communities
- You fail to use any existing evidence/theories to inform your question (wasting available work that could help create your question)
- There is no real aim or purpose to asking questions, you are really just asking for the sake of it.

Or, as one of this book's reviewers, Kate Sherry, noted, *"Interesting" is not a good enough reason to ask for people's time and information.*

To create or refine your research question you may have tried to read peer-reviewed papers or academic books. If you have struggled to understand them, or feel you need to boost your confidence and skills in this area, you may wish to consult the following before embarking on a formal literature search:

*How to read journal articles in the social sciences: A very practical guide for students*, Phillip Chong Ho Shon (2012), Sage.

Sage Study Skills: <https://studysites.uk.sagepub.com/studyskills>

How to read (and understand) a social science journal article [www.icpsr.umich.edu/files/instructors/How\\_to\\_Read\\_a\\_Journal\\_Article.pdf](http://www.icpsr.umich.edu/files/instructors/How_to_Read_a_Journal_Article.pdf)

*There are 10 questions I ask myself before I start on any new project.*

1. *What do I want to find out?*
2. *How am I going to discover more?*
3. *What (and who) can I use to help me achieve that?*
4. *Who will I be working with?*
5. *How much will it cost?*
6. *How can I work safely and ethically?*
7. *What can I do to ensure my work is fair and inclusive?*
8. *How will I make sense of my findings?*
9. *How will I know if what I have done has worked?*
10. *Who should I tell about what I have done and how can I best reach them?*

*Noting these answers lets me reflect if I am choosing the right approach, refine my question and consider if I'm being overambitious in my plans. (Gamon, project worker)*



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## Exercise: Scoping Your Question

If you have an idea about what you want to do, but it's not entirely clear to you; or perhaps you have lots of issues you want to discuss, this exercise can help you condense your thoughts. Write down what you want to investigate. This may take the form of a number of questions, or a set of reasons why your work needs to be conducted, which may have already arisen in your planning/mapping/storyboarding work described previously. You may also have key ideas or phrases that fit with your study idea, and perhaps even some general thoughts that may fit in with the work. Alternatively inspiration may come from a life experience, a news event, a film, or piece of creative writing you've read. Once you've noted everything you can think of about your possible question, leave it for a couple of days. Then return to it and read through what you've written. Can you see a general theme or idea—a specific question? You might see several. In this case, focus on the one that interests you most, or is the most pressing. Don't discard the other ideas though—they may be something you can return to later.

You may find the following blog post, The ultimate guide to creating research questions, useful: <http://theresearchcompanion.com/ultimate-research-questions>

## BACKGROUND AND BACKUP INFORMATION

Once you've worked out your question, albeit in draft form at this stage, the next step is to find out two things—"Has anyone already done this?" (in which case you may need to alter your question or even abandon your original idea); and "What literature exists to support what I'm planning to do?" If someone seems to have already carried out a study that seems to match your idea, don't despair—it can be very beneficial. For instance, you may be interested in looking at the use of a lunch club for older people and their carers. You may discover a paper that has done exactly that, but in another country. You can take the ideas and findings from that work (ensuring you fully reference/credit it), and apply them to your study setting. There's no point in reinventing the wheel. Alternatively you may find a study that's similar to your idea but hasn't covered what you want to look into, which can be used as further justification for your research.

*When reading papers on topics that match the area you are hoping to study look*



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*carefully at any sections covering limitations and recommendations for further research. This may give you either novel ideas to take forward yourself, or focus the question you are developing. It has the advantage of building on existing work too.*  
(Margaret, librarian)

We frequently use literature to show what's already been done, and why our work is still needed. However, don't limit yourself to this. By reading papers and reports smartly, you can also find out other issues—for example, in the studies you've found that match your research idea do they talk about any methodological difficulties (around recruitment, any questions asked, etc.)? By using papers as more than a justification for your work you can gain a useful insight into how to run a project. While you are searching for literature around your question, consider also how you think you may want to go about answering that question (for example, through a survey, observation, or interview). You can also complete literature searches around using these methods in the population you want to look at, as it may be that your question is right, but the initial way you plan to approach it is not suitable for your participants (more on this later). At this stage of a study you are working through literature to see what helps support and inform your study. Keep a record of papers, and make notes around what aspects of them are useful. You also need to consider what you're collecting literature for at this time—are you looking to write a project or report, or are you going to create a bid for funding? If it's the former, your literature review should be detailed and systematic; for the latter you need to cite key papers and justify your question, but it is acknowledged that you'll continue literature searching during the course of the study (once it's funded).

*I begin writing about my study pretty much as soon as I think of my research question. I create an "introduction" and label different sections which I then add to as new papers come to my attention. I move it around a fair bit and some references get dropped out at the end, but it keeps me focused on my work and saves me loads of time at the end of the project when we're really busy with other tasks.* (Kim, lecturer)

## WHERE CAN I GET INFORMATION

It's often assumed that we all know how to carry out literature searches, but this isn't the case (see Table 2.1). It isn't the purpose of this section to teach how to



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carry out a literature search, but if you want more information on how to do this I recommend these guides:

*Writing literature reviews: A guide for students of the social and behavioural sciences* (5<sup>th</sup> ed.), Jose L. Galvan (2012), Pyczak Publishing.

*The literature review: A step-by-step guide for students* (2<sup>nd</sup> ed.), Diana Ridley (2012), Sage.

*Doing a literature review in health and social care: A practical guide* (3<sup>rd</sup> ed.), Helen Aveyard (2014), Open University Press.

*Research for development: A practical guide* (2<sup>nd</sup> ed.), Sophie Laws (2013), Sage.

In searching for papers you should begin with peer-reviewed literature published in journals. Table 2.2 lists examples of search engines and research archives you may use to find papers. Most of these have online tutorials that explain how to use them. Some may require a fee or institutional access, although most are free to browse. However you may find specific papers are limited in terms of access. If a paper is not open to you then email the (lead) author and ask them for a copy of their work. You may want to copy in their media office (if one exists) to ensure a response. If you are requesting a paper, let the author know who you are, and what you are doing, and ask if they have any insider knowledge to share with you based on their work that might strengthen the research you are planning. Alternatively your local library may be able to help you search for books or papers. Literature searching takes time to learn to do swiftly and with confidence, so if your library offers training in how to use any search facilities, make use of it (if you are a junior researcher, PhD student or volunteer and haven't ever been trained in this area, you may wish to ask for this as part of your career development). The reason for getting training is that many search facilities include ways of combining searches, making it easier for you to find exactly what you want, and narrow down your work.

**TABLE 2.1 Some common worries about literature**

<i>Problem</i>	<i>Solution</i>
<i>I don't know where to start!</i>	Focus your searching on one key area or database; from this you can build outwards.
<i>I don't know how to read papers/reports.</i>	A guide on how to read a paper can provide hints on what to focus on. I recommend <i>How to read a paper: The basics of evidence based medicine</i> (4th ed.), Trisha Greenhalgh (2010), Wiley Blackwell.



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*I can't follow some of the sections.*

Again, using a guide may help. If there are particular sections you struggle with (e.g. "results"), then ask a colleague or friend who can follow such sections to help you. You can also find out what's going on by reading the other sections in the paper/report. Don't avoid the sections just because they are hard—it may mean you miss some crucial information. Some people find they improve their skills by reading the method and results first, and then try to guess what the discussion should say.

*There's too much literature—do I have to read all of it?*

Nobody can be expected to read everything (unless undertaking a systematic review). However, you should show that you've covered the key areas surrounding your research question. If you are generating too much literature you can limit your searches (e.g. to a period of time or source of information)—although you'll need to justify why you made such a choice. Alternatively you can hone down your question in order to make it more specific and reduce the literature you need to search. Be pragmatic. If you are involved in a long-term piece of work with multiple staff members and institutional library access you will have far greater opportunities to thoroughly review the literature than if you are a lone worker on a short-term project with limited access (see Chapter 8).

*I can't find any literature in my area of enquiry.*

Often if we're over-specific or too literal, it seems there's no literature on our question. You may have to think laterally to begin with (e.g. if you can't find something on stress in school teachers (which is unlikely), look for stress-related

research on other professions). If you really can't find any literature, then you may want to flag this up in your writing, but do so with caution—don't claim there is no literature out there because the chances are there is, but you haven't found it. Instead say you've not been able to find any and cite any specific reasons why (e.g. lack of time, access).

*I can read the literature, but how do I write it up?*

If you are writing an essay, you can describe studies in more detail. If you are writing a report, you tend to list studies to support points you're making (this book follows the latter method). A good tip on learning how to write up papers/reports is to search for existing literature in your area and copy that format. (See Chapter 8.)



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<i>Problem</i>	<i>Solution</i>
<i>I keep getting muddled with what I've read and what I haven't.</i>	You may find an online database or project app helpful. See below for more management tools. For smaller projects you may want to use a card index system.

**TABLE 2.2 Examples of search engines and research archives**

Google Scholar <https://scholar.google.co.uk>  
 Web of Knowledge <http://wok.mimas.ac.uk>  
 Cochrane Library [www.cochranelibrary.com](http://www.cochranelibrary.com)  
 Pubmed [www.ncbi.nlm.nih.gov/pubmed](http://www.ncbi.nlm.nih.gov/pubmed)  
 PsychInfo [www.apa.org/pubs/databases/psycinfo/index.aspx](http://www.apa.org/pubs/databases/psycinfo/index.aspx)  
 Wikipedia's list of academic databases and search engines: [https://en.wikipedia.org/wiki/List\\_of\\_academic\\_databases\\_and\\_search\\_engines](https://en.wikipedia.org/wiki/List_of_academic_databases_and_search_engines)

As well as searching through the published literature, you may want to see whether there is ongoing, unpublished research in a similar area. Most organisations that fund research now host registers of ongoing and completed projects, while you may also find open datasets from past research you could utilise. Some are archived in these two posts:

Quantitative data archives and repositories

<http://theresearchcompanion.com/quantitative-data-archives-and-repositories>

Repositories for teaching and learning qualitative analysis

<http://theresearchcompanion.com/repositories-for-teaching-and-learning-qualitative-analysis>

Books are another useful source of information, as is “grey literature” (papers, reports and internal documents created for use within organisations, which may not have been published). Blogs and articles in magazines or newspapers can also be helpful, and should not be excluded because they are not “peer reviewed” (although if you are preparing a rigorous study you will need to show you have considered information from a variety of sources).



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## KEEPING ON TOP OF THINGS

Managing references in the form of papers, pdfs, reports, notes and so on can soon feel overwhelming, particularly on a long-term or large-scale piece of work. Using a reference management system is a good idea, and the following have been tried and tested by colleagues:

Endnote <http://endnote.com>

Citeulike [www.citeulike.org](http://www.citeulike.org)

ACSChemworx <https://hp.acschemworx.acs.org> Mendeley [www.mendeley.com](http://www.mendeley.com)

ReadCube [www.readcube.com](http://www.readcube.com)

RefMe [www.refme.com](http://www.refme.com)

Zotero [www.zotero.org](http://www.zotero.org)

Papers [www.papersapp.com](http://www.papersapp.com)

Citethisforme [www.citethisforme.com](http://www.citethisforme.com)

ComWriter [www.comwriter.com](http://www.comwriter.com)

Wikipedia has a comparison of reference management software:

[https://en.wikipedia.org/wiki/Comparison\\_of\\_reference\\_management\\_software](https://en.wikipedia.org/wiki/Comparison_of_reference_management_software)

Some packages are free, while others require an institutional or personal subscription. You may want to try different reference management software to find the one that suits you best. Most software websites contain introductory information and tutorials explaining how to use the system and why it might benefit you. If you are working on a collaborative project it is sensible for everyone to use the same systems.

## Literature searching—some dos and don'ts (adapted from Hart, 1998, p. 219)

Do:

- Identify and discuss the relevant key landmark studies on the topic
- Include as much up-to-date material as possible
- Check the details, such as how names are spelled
- Try to be reflexive; examine your own bias and make it clear
- Critically evaluate the material and show your analyses
- Use extracts, illustrations, and examples to justify your analyses and argument



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- Be analytical, evaluative and critical and show this in your review
- Manage the information that your review produces; have a system for records management
- Make your review worth reading by making yourself clear, systematic and coherent; explain why the topic is interesting.

## Don't:

- Omit classic works and landmark studies or discuss core ideas without proper references
- Discuss outdated or only old materials
- Misspell names or get dates of publications wrong
- Use concepts to impress or without definition
- Use jargon and discriminatory language to justify a parochial standpoint
- Produce a list of items, even if annotated; a list is not a review
- Accept any position at face value or believe everything that is written
- Only produce a description of the content of what you have read
- Drown in information by not keeping control and an accurate record of materials
- Make silly mistakes, e.g. orgasm in place of organism
- Be boring by using hackneyed jargon, pretentious language, and only description.

*A colleague asked me to help with a literature review. I asked “what is your question?” They didn’t have one. They assumed that if they carried out a literature review on a general topic, a specific question would automatically emerge. I explained while that could happen, in general it is better the other way around. Start with a question that guides your literature search, but be informed by that search as you may need to change or adapt your question depending on what your search uncovers. (Kai, teaching assistant)*

It can be assumed that while we might need some help in finding papers, once we have them, reading, understanding, critiquing, synthesising and applying them should be straightforward. In practice it is not so simple. While getting hold of papers may be a skill to learn—and made more complex if access is an issue—reading them can also be daunting. If this applies to you, then you may want to begin by working out a reading strategy that suits you. Some people like to gather all their papers together before working through them. Others are happy to



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do so on a case-by-case basis. You may find making notes using pen and paper or on a computer helps you remember key points; while others use highlighter pens to mark core passages within papers to help them follow arguments. You may prefer to summarise at the end of each paper what it said and how it applies to your work. If you are working digitally you may wish to copy core parts of the paper you may wish to quote later (ensuring all details are noted about the work you are citing so you can correctly reference it in the future: Chapter 8 talks about this in more detail).

## FURTHER HELP

*Reading and making notes* (2<sup>nd</sup> ed.), Jeanne Godfrey (2014), Pocket Study Skills, Palgrave Macmillan.

*“They say/I say”: The moves that matter in academics writing* (3<sup>rd</sup> ed.), Gerald Graff & Kathy Birkenstein (2014), W.W. Norton and Company.

*BITE: Recipes for remarkable research*, Alison Williams, Derek Jones & Judy Robertson (2014), Sense Publishers.

*Cite them right: The essential referencing guide*, Richard Pears & Graham Shields

While it may feel like you are introducing more work into your research by stopping and thinking about how to take notes and read critically and carefully, checking you have these skills is important because you may find you struggle to process and reflect on information if you don't have the ability to read books and papers (Booth, Colomb & Williams, 2008; Martin, 2014). Building time into a project to develop reading, writing and study skills is a basic step that is often overlooked when planning research. In addition to the texts already recommended above, Raul Pacheco Vega has collated online resources that will help you with your reading:

[www.raulpacheco.org/2015/08/online-resources-to-help-students-summarize-journal-articles-and-write-critical-reviews-and-note-taking](http://www.raulpacheco.org/2015/08/online-resources-to-help-students-summarize-journal-articles-and-write-critical-reviews-and-note-taking)

[www.raulpacheco.org/2015/08/highlighting-and-note-taking-on-journal-articles-as-engagement](http://www.raulpacheco.org/2015/08/highlighting-and-note-taking-on-journal-articles-as-engagement)

These skills may fall under a broader range of study skills which many of the “how to” books listed already in this chapter may be able to help you with, particularly if you are new to study or have returned to research or learning after a time away.



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Helen Kara's (2015) ebook *Gathering data for your PhD*, [www.knowmorepublishing.com](http://www.knowmorepublishing.com), comes highly recommended by colleagues –whether you are studying at doctoral level or doing independent research. While *The study skills handbook* (4<sup>th</sup> ed.), Stella Cottrell (2014), Palgrave, is a reassuring and practical guide. As are these online resources from Palgrave: <https://he.palgrave.com/studentstudyskills/page/learning-strategies>; the Open University: [www2.open.ac.uk/students/skills-forstudy](http://www2.open.ac.uk/students/skills-forstudy); and Cal Newport's student guides: <http://calnewport.com>

Once you've started searching through literature you also need to consider what method(s) you want to use to answer your question. Don't forget that your literature searching should continue throughout the time you are completing your research, in case any new information becomes publicly available. When thinking about methods, forget about that tired old debate around qualitative versus quantitative. Instead consider what method is best suited to your research question, your timescale, the budget (if appropriate), your skills, and the needs and abilities of participants (see O'Leary, 2014; Babbie, 2015; Gray, 2014). Table 2.3 summarises some of the more popular methods used in social and health research and development that you might consider (although it is by no means exhaustive).

## FURTHER HELP

*How to research* (4<sup>th</sup> ed.), Lorraine Blaxter, Christina Hughes & Malcom Tight (2010), Open University Press.

*Doing your research project: A guide for first time researchers* (6<sup>th</sup> ed.), Judith Bell with Stephen Walters (2014), Open University Press.

*The good research guide: For small scale social research projects* (5<sup>th</sup> ed.), Martyn Denscombe (2014), Open University Press.

*Research methods in health: Investigating health and health services* (4<sup>th</sup> ed.), Ann Bowling (2014), Open University Press.

*Research design: International student edition*, John W. Cresswell (2014), Sage.

*A practical guide to research methods: A user-friendly manual for mastering research techniques and projects*, Catherine Dawson (2009), How To Books.

*The practical researcher: A student guide to conducting psychological research*, Dana S. Dunn (2013), Wiley Blackwell.

*An introduction to health services research*, Dawn Marie Walker (2014), Sage.

*A gentle guide to research methods*, Gordon Rugg & Marian Petre (2006), Open University Press



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The methods listed in Table 2.3 can be used individually or in combination via mixed methods approaches or triangulation. Increasingly methodologies are incorporating creative processes such as crafting, poetry, photography, film or drama; while social media is both a source of data and provides opportunities for doing and sharing research. A full list of different research methods you might consider is covered here: <http://theresearchcompanion.com/research-methods-typology> (see also Chapter 8). Chapter 4 (piloting) explains more on how methods may be selected and rejected. Now is a good time to return to the ideas raised in Chapter 1, asking you to think about your own skills and abilities—and how the people you will be working with are going to understand and respond to any particular method you might choose. Ask yourself, in picking this method and subsequent data analysis, who will I be including in my research, and who might I be leaving out? What historical, social and cultural baggage is brought along with my choices of method and analysis? What hidden assumptions, values and prejudices might lie behind the methods and analysis I have picked?



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**TABLE 2.3 Methods you may want to consider**

Stage of research	You may be thinking . . .	Type of research	Possible methods you could use	Resources to help you
Exploratory	I don't have a clear sense of my exact research problem/question yet or know what methods I should use.	Exploratory	Literature reviewing; interviews; case studies; focus groups; pilot studies; grounded theory	<p><i>Interviews in qualitative research</i>, Nigel King &amp; Christina Horrocks (2015), Sage</p> <p><i>Focus groups: A practical guide for applied research</i>, Richard A. Krueger &amp; Mary Anne Casey (2014), Sage</p> <p><i>Focus groups: Theory and practice</i>, David W. Stewart (2014), Sage</p> <p><i>A very short, fairly interesting and reasonably cheap book about qualitative research</i>, David Silverman (2013), Sage</p> <p><i>Interpreting qualitative data</i> (4th ed.), David Silverman (2011), Sage</p> <p>SRQR (Reporting Guidelines for Qualitative Research) <a href="http://www.equator-network.org/reporting-guidelines/srqr">www.equator-network.org/reporting-guidelines/srqr</a></p> <p>COREQ (Reporting Guidance for Interviews and Focus Groups) <a href="http://www.equator-network.org/reporting-guidelines/coreq">www.equator-network.org/reporting-guidelines/coreq</a></p> <p>ENTREQ (Enhancing Transparency in Reporting the Synthesis of Qualitative Research) <a href="http://www.equator-network.org/reporting-guidelines/entreq">www.equator-network.org/reporting-guidelines/entreq</a></p> <p><i>Design of observational studies</i>, Paul R. Rosenbaum (2012), Springer</p> <p>STROBE (Strengthening Reporting on Observational Studies in Epidemiology) <a href="http://www.strobe-statement.org">www.strobe-statement.org</a></p> <p><a href="http://www.equator-network.org/reporting-guidelines/strobe">www.equator-network.org/reporting-guidelines/strobe</a></p> <p><i>Case study research: Design and methods</i> (5th ed.), Robert K. Yin (2013), Sage</p>
Descriptive	I need to find out the background to an area and what is going on with a particular topic/issue/community.	Descriptive	Observation; case study; surveys/questionnaires	
Descriptive	I need to identify characteristics of a given population. What are these people/this community like?	Descriptive	Observation; case study; surveys/questionnaires	



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<p>Explanatory</p> <p><i>I want to look at cause and effect relationships.</i></p>	<p>Causal</p> <p>Experiments (some qualitative methods can do this too although not everyone is in agreement about that!)</p>	<p>CARE (Case Reports) Reporting Guidelines  <a href="http://www.care-statement.org">www.care-statement.org</a>  <a href="http://www.equator-network.org/reporting-guidelines/care">www.equator-network.org/reporting-guidelines/care</a>  <i>Questionnaire design, interviewing and attitude measurement</i>, A.N. Oppenheim (1998), Continuum  <i>Developing a questionnaire</i> (2nd ed.), Bill Gillham (2008), Continuum  <i>Web survey methodology</i>, Mario Callegaro &amp; Katja Loza Manfreda (2014), Sage  <i>Asking questions: The definitive guide to questionnaire design</i>, Norman M. Bradburn, Seymour Sudman &amp; Brian Wansink (2004), Wiley  <i>Designing and reporting experiments in psychology</i>, Peter Harris (2008), Open University Press  <i>Experimental design for the life sciences</i> (3rd ed.), Graeme Ruxton &amp; Nick Colgrave (2010), Oxford University Press  <i>Measuring behaviour: An introductory guide</i>, Paul Martin &amp; Patrick Bateson (2007), Cambridge University Press  <i>Research methods and statistics in psychology</i> (6th ed.), Hugh Coolican (2014), Psychology Press  <i>Statistics in psychology: Explanations without equations</i>, Stephen Jones (2010), Palgrave Macmillan            Participatory Methods <a href="http://www.participatorymethods.org">www.participatorymethods.org</a>            The People's Report <a href="http://www.thepeoplesreport.com">www.thepeoplesreport.com</a>  <i>Participatory action research: Theory and methods for engaged inquiry</i>, Jacques M. Chevallier &amp; Daniel J. Buckles (2013), Routledge  <i>Creative methods in the social sciences: A practical guide</i>, Helen Kara (2015), Policy Press.</p>
<p>Comparative</p> <p><i>I'd like to look at the differences and similarities between communities.</i></p>	<p>Cross-national            Cross-cultural            Within this you could include surveys; interviews; Participatory Action Research (PAR); creative and visual methods; experiments.</p>	



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**Table 2.3 (continued)**

Stage of research	You may be thinking . . .	Type of research	Possible methods you could use	Resources to help you
			It is important to note how methods translate and travel within different communities and the historical baggage they can bring with them.	
	<i>I want to prove or disprove something.</i>	Hypothesis testing research	Experiments; interventions	<i>Complex interventions in health: An overview of research methods</i> , David A. Richards & Ingallil Rahm Hallberg (2015), Routledge
	<i>I need a snapshot of what's going on in a particular community/organisation/ population (without doing any intervention)</i>	Cross-sectional	Observation; diaries; surveys; interviews; physical measures (e.g. weight, height, blood count)	<i>What is diary method?</i> Ruth Bartlett & Christine Milligan (2015), Bloomsbury
	<i>I want to see how people live without intervening or changing situations.</i>	Observational	Unstructured approaches— participant observation; ethnography; case study Structured approaches— survey; schedules; checklists	<i>Ethnography and virtual worlds: A handbook of method</i> , George E. Marcus & Tom Bollestorff (2012), Princeton University Press <i>Research practice for cultural studies: Ethnographic methods and lived cultures</i> , Ann Grey (2002), Sage <i>Ethnographic methods</i> (2nd ed.), Karen O'Reilly (2011), Routledge <i>Writing ethnographic fieldnotes</i> (2nd ed.), Robert Emerson, Rachel Fretz & Linda Shaw (2011), University of Chicago Press <i>Ethnography: Principles in practice</i> (3rd ed.), Martin Hammersley & Paul Atkinson (2007) Routledge



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<i>I want to see how people/organisations/communities change or remain the same over time.</i>	Longitudinal	Observation; creative and visual methods; diaries; interviews (including life history and narrative interviews); surveys	<i>Handbook of longitudinal research: Design, measurement and analysis</i> , Scott Menard (2007), Academic Press <i>Intensive longitudinal methods: An introduction to diary and experience sampling research</i> , Niall Bolger & Jean-Philippe Laurenceau (2013), Guilford Press
<i>I'd like to measure differences between people or groups; or the effects of treatments or tests</i>	Experimental/ quasi- experimental.	Randomised controlled trials (RCTs); laboratory, field and natural experiments; interventions	<i>How to design, analyse and report cluster randomised trials in medicine and health related research</i> , Michael J. Campbell & Stephen J. Walters (2014), Wiley Blackwell <i>Designing randomised controlled trials in health, education and the social sciences: An introduction</i> , David J. Torgerson & Carole J. Torgerson (2008), Palgrave
<i>I need to find out what does and doesn't work in organisations, systems and communities, and give useful and meaningful feedback.</i>	Evaluation	Realist evaluation; evaluation; surveys; interviews; nominal groups; focus groups; field and natural experiments; quality improvement	CONSORT (Consolidated Standards of Reporting Trials) Guidelines <a href="http://www.consort-statement.org">www.consort-statement.org</a> <a href="http://www.equator-network.org/reporting-guidelines/consort">www.equator-network.org/reporting-guidelines/consort</a> SPIRIT (Standard Protocol Items: Recommendations for Intervention Trials) <a href="http://www.spirit-statement.org">www.spirit-statement.org</a> <a href="http://www.equator-network.org/reporting-guidelines/spirit-2013-statement-defining-standard-protocol-items-for-clinical-trials">www.equator-network.org/reporting-guidelines/spirit-2013-statement-defining-standard-protocol-items-for-clinical-trials</a> All Trials <a href="http://www.alltrials.net">www.alltrials.net</a> <i>The science of evaluation: A realist manifesto</i> , Ray Pawson (2013), Sage <i>Realistic evaluation</i> , Ray Pawson & Nick Tilley (1997), Sage SQUIRE (Standards for Quality Improvement Reporting Excellence) <a href="http://www.squire-statement.org">www.squire-statement.org</a> <a href="http://www.equator-network.org/reporting-guidelines/squire">www.equator-network.org/reporting-guidelines/squire</a> CHEERS (Consolidated Health Economic Evaluation Reporting Standards) <a href="http://www.equator-network.org/reporting-guidelines/cheers">www.equator-network.org/reporting-guidelines/cheers</a>



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**Table 2.3 (continued)**

Stage of research	You may be thinking . . .	Type of research	Possible methods you could use	Resources to help you
	<i>I want to find out in detail about an individual, organisation, community, event or activity.</i>	Case study	Surveys; checklists; existing notes; archives; diaries; PAR; creative and visual; schedules; interviews; observation	<i>Case study research: Design and methods</i> (5th ed.), Robert K. Yin (2013), Sage <i>How to do your case study: A guide for students and researchers</i> , Gary Thomas (2011), Sage
	<i>I have a research idea, but I am unsure how feasible it is, how much it would cost, how long it would take or if people will want to join in and respond to it.</i>	Pilot study	Small-scale version of a final, planned and larger project. Could use any of the methods listed above, but particularly may wish to use evaluative techniques to reflect on whether the pilot indicates further work is necessary/ appropriate	See above for sources that might be included in pilot study work or resources here: <a href="http://theresearchcompanion.com/resources">http://theresearchcompanion.com/resources</a>
	<i>I would like to see, discuss and understand the everyday lives of people in communities, organisations, clubs, etc.</i>	Field	Observation; diaries; PAR; creative and visual; schedules; surveys; interviews	<i>Small places, large issues: An introduction to social and cultural anthropology</i> (4th ed.), Thomas Hylland Eriksen (2015), Pluto Press <i>An introduction to social anthropology: Sharing our worlds</i> (2nd ed.), Joy Hendry (2008), Palgrave Macmillan
	<i>I would like to see if any difference is made by (a planned) change/ update/restructuring/</i>	Change	Experiments, quality improvement: PDSA (Plan, Do, Study, Act)	<i>Preparing for continuous quality improvement for healthcare: Sustainability through functional tree structures</i> , Reza Ziaee & James S. Bologna (2015), Productivity Press Institute for Healthcare Improvement's PDSA resources



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<i>implementation of services or facilities in my community/organisation.</i>	DMAICR (Define, Measure, Analyse, Improve, Control, Replicate)	<a href="http://www.ihl.org/resources/pages/tools/plandostudyactworksheet.aspx">www.ihl.org/resources/pages/tools/plandostudyactworksheet.aspx</a> NHS Scotland's Quality Improvement Hub <a href="http://www.qihub.scot.nhs.uk/default.aspx">www.qihub.scot.nhs.uk/default.aspx</a>
<i>I want to observe/support/join individuals, communities, groups or organisations in changing, transforming, challenging, recording or campaigning on everyday life or wider issues.</i>	Collaborative PAR; creative and visual; surveys; field experiments; checklists; interviews The focus here is on a community driving through an idea, method and approach. Commonly working as researchers and partners within a project	<i>Bridging scholarship and activism: Reflections from the frontlines of social research</i> , Bernd Reiter & Ulrich Oslander (2014), Michigan State University Press
<i>I would like to compare, contrast or combine findings from multiple, existing studies.</i>	Meta-analysis and synthesis	<i>Doing a systematic review: A student's guide</i> , Angela Boland, M. Gemma Cherry & Rumona Dickson (2013), Sage <i>An introduction to systematic reviews</i> , David Gough & Sandy Oliver (2012), Sage <a href="http://www.cochrane.org">www.cochrane.org</a>
<i>I want to use pre-existing data collected in other research—records, documents or other archives/datasets.</i>	Secondary analysis	See above, and also Table 8.2 "Presentation formats you might like to consider" (p. 225)
		PRISMA (Preferred Reporting Items for Systematic Reviews and Meta Analysis) <a href="http://www.prisma-statement.org">www.prisma-statement.org</a> <a href="http://www.equator-network.org/reporting-guidelines/prisma">www.equator-network.org/reporting-guidelines/prisma</a>



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**Table 2.3 (continued)**

Stage of research	You may be thinking . . .	Type of research	Possible methods you could use	Resources to help you
	I don't think one method alone will be enough to answer my question, and I don't want to miss crucial information or exclude people or issues.	Mixed/multi-methods	Any of the aforementioned approaches could be used with combinations of qualitative, quantitative or both kinds of methods employed	Ibid.
	I want to document people's lives, experiences and views using tools and resources that are engaging, inclusive and accessible, and where participants can decide how they want to express themselves.	Creative and visual	Film; diaries; image-based; making and crafting; art—drawing, collage, photography, cartooning, painting, etc.; performance—dance, drama, poetry; workshops; interviews	Ibid.
	I would like to carry out research using the internet (including social media), or study how people use, create, interact or live within digital spaces.	Digital methods	Observation; online surveys; focus groups; content analysis	Ibid.



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## THINKING ABOUT ANALYSIS

It's never too soon to start thinking about analysis. First, be clear in your own mind about whether your question requires a qualitative or a quantitative method, and then think about what analysis will match your method. The reason for this is twofold. If you aren't sure of how to analyse quantitative or qualitative data, it gives you time to learn (or time to find someone who can help you do it!). It also means you can design your study questions so that analysis suits your needs. For example, if you're going to use a questionnaire but know you're not very good at statistics, you have two choices—either design questions that have simple yes/no/don't know responses rather than rating scales, or, if you have to use an existing measure that will result in complicated statistical analysis, build payment of a statistician into your budget (or ask a friend who's good at stats to help you). Alternatively, if you plan to use qualitative analysis you can organise your questions to fit your study time limit so you can cope with the information generated, noting you will need to rigorously interrogate any data returned so you will need the corresponding analytical skills to achieve this.

You may decide to use more than one method within your work, or need to switch to a different method depending on participant/community need, or other unanticipated factors. It is worth noting that the skills covered in the resource books and websites listed in Table 2.3 often overlap. For example, if you are undertaking a trial you might also need to prepare notes on what is happening, so you may find resources from ethnography or observational research helpful to you.

*When I first began research I didn't realise I had any control over it. If I were doing a questionnaire I'd set it up using rating scales and multiple answers. Then I'd have a nightmare trying to analyse it and often had to drop questions out of my analysis. With qualitative questions I assumed it was easier so asked loads of items, only to find it took me hours to transcribe and, worse still, I found it difficult to wade through all the text produced. Luckily I went to a conference where one of the speakers told us WE were the ones who determined how we asked questions and ultimately could set how we analysed our data. It was a revelation to me, and I now design my work to fit in with my abilities as a researcher, along with limitations of time and money. (Nisha, senior research manager)*



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*On my first research job I was surprised about what they asked me to do. I've got a masters in health psychology and I was worried they'd ask me to complete analysis, do statistics, etc. Stats have never been my strong point! But I didn't do anything like that at all. Even though I knew in theory about research, my job involved interviewing patients and entering data. I didn't do data analysis at all. They had a statistician for that. I felt a bit deskilled on the one hand, but relieved there was an expert there to do the stats I knew I'd struggle with. (Geoff, researcher)*

## PURPOSE, SCALE, AND PROPOSED END RESULT

Chapter 3 covers timescales and research objectives in more detail. However, in the planning stages of a study it's important to make feasible research designs. This means that if your research is for a dissertation or small project, you don't need to think up complicated designs with large numbers of participants and huge amounts of data to process.

*Whatever research you are planning, it's better to keep your original question as straightforward as possible, and make sure whatever methods you use are simple too. (Lucy, lecturer)*

Four broad issues—time, money, your existing skills, and support—will affect the scale of your research. You also need to consider who or what the work is for and what you want to get from it. If you are planning on making wide-ranging conclusions, you need to have utilised a representative and appropriately sized sample. This doesn't necessarily mean lots of people, but it does mean recruiting the right number of the right sort of participants (people who reflect what your research is about). For a small-scale project, a smaller sample is appropriate. If, however, you want to run a study to show how a new teaching method works, or how an alternative form of healthcare could benefit people, you will need to design a bigger project with more support (assistants, secretaries, and so on: see next chapter). If you are using secondary data or analysing existing texts or other formats you will still need to consider what is feasible within the timescale and requirements of your planned work.



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Finally, think about the end result of your work. Is it for an undergraduate or postgraduate degree? Is it to make a difference within your community or place of work, or are you intending to make recommendations on a local, national, or global level? Is your work something that can/should be reproducible and replicable—and if so, what are you doing to ensure any subsequent verification can happen? As you begin a study, think about the ultimate aim you have for it—and keep asking “Why am I doing this work? What is it for and where will it end up?”

## MAKING RESEARCH PLANS AND STAKEHOLDER ANALYSIS

There are many parts of a research project, and different people will be involved at different stages. It is worth being aware of the following factors that will affect your work: the project sponsor; the person or organisation that will use the results; the objectives and scope of your work; constraints (e.g. time, access to participants); budgets, costs and resources; deliverables (what the final study will look like); project phases and timetables; your methodology; risks (what could foreseeably go wrong and contingency plans); whether research will require implementing, evaluating and sustaining; and responsibilities (who does what by when). All of these issues may vary depending on what your project is about, where it is located, and the grade or level of responsibility you have within the research.

Create your own stakeholder analysis, so you can establish what you need to do to complete your research, the tasks others will be required to do, and what the eventual aims are for everyone in the research. For example, the project sponsor will want a report and outcomes for discussion; you may want career development; and the local community may need a resource evaluated. A stakeholder analysis allows you to identify key people who need to be brought or kept inside within your research. For more on how to complete a stakeholder analysis, visit:

Mind Tools on Stakeholder Analysis

[www.mindtools.com/pages/article/newPPM\\_07.htm](http://www.mindtools.com/pages/article/newPPM_07.htm)

UNDP Handbook on Planning, Monitoring and Evaluating for Development Results

<http://web.undp.org/evaluation/guidance.shtml#handbook>



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ASA Guide to stakeholder analysis

[www.theasa.org/networks/apply/ethics/analysis/stakeholders.html](http://www.theasa.org/networks/apply/ethics/analysis/stakeholders.html)

## **Exercise: Who are your stakeholders?**

Note everyone who could be involved in your research (e.g. your boss, funding body or potential participants or community members). If you are working with colleagues on a project you may wish to do this with your project team. On a second sheet prioritise these stakeholders—whom do you need to make links with/win over first? This will help you direct your networking to the correct people. Finally, go back to your first sheet and look at each person you have listed (even if you don't know them, you know what they represent). Ask yourself what would motivate them to be part of your study, what information you would require from them, what they may think of you and what you think about them, who else may influence their opinions that you may approach, and what you'll do if you can't get them to support you. By doing this you can anticipate all the different needs of people involved in your research, as well as planning a strategy for those who may be opposed to it.

If work has been done in a previous area there may already be information available about any opportunities or barriers that could affect your research. You might ask community members or potential participant groups in the area where you would like to work what their past experience of research (if any) has been. Talking to colleagues or authors of other research papers or reports in related areas could also provide additional insights. This might reveal positive past events you can build upon with your work. Or it could indicate a past or recent history of unethical, exploitative or upsetting practice that may make working in the area tense or difficult.

## **PARTICIPANT / RESEARCHER NEEDS**

As well as thinking about your question, method, and timescales, it's also worth considering whom the research is going to be carried out with. You may have identified a problem clearly, and know who your participants are, but frequently studies run into difficulties when the needs of the participants, the study question and the proposed methods don't match up.



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*We wanted to look into the problem of bullying of street children. We felt it was a really important and worthwhile issue, but our first idea of using a questionnaire went really wrong. Not all of our participants could read proficiently. We eventually opted to use the kids to interview each other about their experiences, worries, and concerns about bullying. (Nancy, research coordinator)*

Work out whether your method will suit the needs of your participants. Your two priority issues are what question you want answered and who you want to recruit to help you answer it (participants). The method should be suited to those two requirements, rather than trying to force a method onto a study question or group of people (more on this in Chapter 5). If your study will require additional costs of translators, developing new methodologies or trialling different approaches, this is not a problem, but you will need to reflect these extra costs in both your time plans (see Chapter 3) and your budget (if appropriate). If it is unlikely you could afford or manage these things it may be better to adapt your method accordingly. However you will need to note why you made these pragmatic decisions and who/what you may be leaving out as a consequence.

If you are designing a study where you plan to employ researchers, you may also need to think about their needs in the planning stages of research. If you intend to use a standardised measure or interview, will they need extra training in how to use this? If particular equipment will be a feature of your study (say a computerised interview, or a blood-testing kit), will you need to teach staff how to use it? Finally, will your staff be placed in risky situations requiring training in assertiveness, breakaway techniques, or negotiation skills? (See Chapter 6.) If so, support for this will need to be factored into your study plan—as will the need for any counselling or emotional support your staff might require (for example if your research focuses on a particularly distressing or emotive issue). Think carefully at this point around how staff will be supported, paid for their time—and also for training and travel (as appropriate). This is particularly an issue if you are salaried within an institution or organisation but people who will be working with you are not covered in this way. If you, or people you will be working with, are not in a university setting or supported by an academic institution you may want to draw upon the advice and information in *The para academic handbook* by Alex Wardrop and Deborah Withers (2014), Hammer On Press.

Alongside considering your stakeholders (see above), the way you approach your work may differ depending on who you will be including in your research.



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Some projects may involve paid for, trained and qualified researchers with experience of running studies (or at least degree-level tuition). Others that might involve volunteers, community or lay researchers may bring in colleagues who have little or no formal education, or who may have formal skills but no research experience. Thinking about who will be working alongside you as a researcher, what their training needs might be and how best to supervise, support and reward their work is vital. Remember you may have someone with few “academic” qualifications who has a variety of important skills and experiences that will enhance your project. Conversely many graduates in the social and health sciences or fields of development may have huge skills gaps and scant practical research experience so might require additional help and mentoring (more on this in the next chapter). You may also find information in Alan Thomas and Giles Mohan’s *Research skills for policy and development: How to find out fast* (2007, Sage) useful.

## MAKING LINKS AND GETTING SUPPORT

The planning stage of any study is the time when you focus on getting the research off the ground. What can be missed is making links with other researchers, services and support groups that can greatly improve your study—and save you lots of time. As you are reading through papers or reports, note who has written them and, if appropriate, make contact. You may want to call or email them or connect on social media if you feel they can help suggest other projects you may be unaware of, recommend any existing papers or measures, or give you an insight into the practicalities of a study (tell you the whole story about what went on in the research you’ve just read in their paper). This can prevent you encountering similar problems to them (around recruitment, analysis, etc.). Attending talks and conferences is a further way to connect with colleagues, as is joining email lists or signing up for newsletters from charities, institutions or organisations. A note of caution, though—network with other researchers appropriately (Boynton, 2003a).

*I get several requests about my research per month, usually asking me questions about measures used, or advice on following a particular study path. I’m happy to answer these emails since it’s always good to share information, and some of these contacts have now become collaborators on research grants with me. What I object to are the letters I get, usually from students, saying things like “I’m doing a project on such-and-such. I would like all the papers you have on this topic. You can write*



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*to me/phone me here.” Like I don’t have anything better to do! It’s not my job to write somebody’s essay and tutors ought to advise their students against this approach. It annoys me and I never write back. If you are making contact with others, do so respectfully and ask them a short question they can answer. After that you may find you can communicate with them about your project, but don’t let your initial approach be a demand for them to work for you. (SL, professor)*

Keep your networking varied. You may want to use professional groups or research organisations (see list in Table 2.4). Alternatively you may want to set up your own group, or ask around—many departments or organisations have their own, informal study groups or journal clubs you could join on or offline. Reading the letters pages in journals relevant to your study can flag up like-minded people, as can writing to introduce yourself if you read a paper that fits your area. Making links with charities or other support groups can add a practical focus to your research, and they are a great place to involve the public as researchers or grant proposers. It is fair to say that not everyone values the importance of networking, and some people may want to guard their research. Don’t be put off if you approach someone who doesn’t seem interested, simply keep increasing your networks and find others who want to collaborate or communicate. Social media allows for wide opportunities to connect and share with like-minded people—for example other PhD students, senior academic staff, community activists, or independent researchers.

**TABLE 2.4 Potential networking sources**

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There are numerous research networks worldwide that have their own features and advantages for finding/connecting with others.

Wikipedia offers a comparison of research networking tools and research profiling systems [https://en.wikipedia.org/wiki/Comparison\\_of\\_research\\_networking\\_tools\\_and\\_research\\_profiling\\_systems](https://en.wikipedia.org/wiki/Comparison_of_research_networking_tools_and_research_profiling_systems)

There is a rich list of potential organisations and services on *The Research Companion* blog’s Resources page which you can browse through <http://theresearchcompanion.com/resources>

You can find worldwide charities listed at [www.charitychoice.co.uk](http://www.charitychoice.co.uk) and [https://en.wikipedia.org/wiki/List\\_of\\_charitable\\_foundations](https://en.wikipedia.org/wiki/List_of_charitable_foundations)

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## Exercise: Planning Partnerships

If you are completing a final year project or a localised study you may not be working with anyone other than yourself, your tutor/supervisor, and any participants. However, other projects require networking or collaborating at local, national or international levels. This may bridge disciplines, occupations, locations and languages spoken. Some partnerships are with colleagues who are very like us, while others may bring very diverse individuals or groups together. Within much research the direction of collaboration has tended to be dominated by well-funded, Western corporations, charities and academic institutions. However changes around funding, research politics, activism and advocacy can lead to partnerships originating in low income countries/communities, ensuring partners are valued and credited for the important original contributions they make to setting study directions, research topics and questions. If you are involved in any collaborations/partnerships can you draw on a map or other diagram how people are being brought together? What are their different needs, expertise and contributions going to be? How does the way you have established your network or partnership bring people in or leave people out? Are traditional hierarchies challenged or maintained? What could you be doing to ensure contributors are not exploited or patronised? This allows you to note any tensions that could be present at the start of the research or during it. Or, more positively, it could be an occasion to celebrate the unique skills everyone in your network has and to ensure those are nurtured and utilised as work progresses (see the next chapter and Chapter 5 for more on this).

*I keep a database with the names, contact details and people's specialities. I can refer to them whenever I need to—and I can also pass on to others who are working in this area. It's all about making and then sharing networks. (Archie, GP)*

*I blog about my work as it goes along, talking about what I am doing, where things are going well (or unexpectedly) and reflect on what I am doing. A friend does similar using a group on social media. Both of us have met lots of people doing similar projects, having found us through Internet searches or recommendations by like-minded colleagues. That has brought many people together and sparked off conversations, activism and additional projects. (Mika, artist)*



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## GROUND RULES

If you are bringing people together for research, teaching and learning, activism or sharing study findings, you may wish to use ground rules (Sensoy & DiAngelo, 2014). While some consider these overly controlling, others prefer to have agreed upon standards for conduct and behaviour to ensure everyone attending feels safe and supported. This may be particularly important if you are hosting events with diverse members of communities, patient or participant groups. And it may be more palatable to consider as an agreement or “friendly” or “helpful” reminder for everyone taking part about what is expected of them. You can share your agreements/rules/covenants before the event via email, in event publicity materials, registration packs or on any event website. Or you may wish to share these during an event in the form of posters or an activity or session that opens a conference, workshop, etc. Be aware that asking guests to create guidance can be divisive and time-consuming so you may be better having a draft agreement for brief discussion and agreement before you start. Or as organisers/researchers, set your own covenants you expect your participants/guests to abide by.

There is always the risk with creating rules that what may appeal to one person may lead to another feeling stifled. And lengthy regulations are liable to be ignored. Having a few, easily understood and agreed upon ideas may work better and again may be determined by the kind of event you are hosting, who is attending, what their needs may be and if there have been any specific issues at past events that require the use of guidelines or reminders currently. Most ground rules require delegates/attendees to take responsibility for their own actions while being mindful of the diverse needs of those around them. Table 2.5 provides examples of ground rules/agreements from past conferences and workshops on diverse topics that may give you ideas or templates to adapt for events of your own.

The six examples of event/group ground rules in Table 2.5 are by no means exhaustive. Nor are they representative of the many different ground rules/agreements people have created for events. However, they do indicate where guidance may be similar, and different. The Geek Feminism Wiki have attempted to collate and evaluate various codes of conduct and their findings may be additionally useful if you are trying to put together guidance for your event: [http://geekfeminism.wikia.com/wiki/Code\\_of\\_conduct\\_evaluations](http://geekfeminism.wikia.com/wiki/Code_of_conduct_evaluations)



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## Exercise: Agreeing to Disagree

Having considered the ground rules set out in Table 2.5, how do they make you feel? Are they the kind of instructions that would make you want to participate in a study or event? Or do you find them off-putting? Which of these might you use, or would you want to create your own guidance with a completely different focus from that listed here? If we think about bringing people in and pushing people out, who might these different agreements encourage or put off? Would this suit the overall goals of any research you hoped to run (for example ground rules that might put off bad behaviour), or be counter-productive (for example people might find the wording or ideas expressed complex or confusing and feel the event might not be for them)? Would these make sense to the communities whom you are trying to reach? If not, what would you need to change/adapt in order for them to work? How about running research without any kind of agreements or covenants—are they really necessary for your planned work?

## BUDGETS AND SOURCES OF FUNDING

This chapter covers general issues about planning a study. Many organisations or universities offer training or in-house courses on how to create budgets or obtain funding. Finance departments (if available) may offer invaluable advice and clear instruction about what to include in your budget (you may be surprised that you need to include for items such as stationery, refreshments for participants or travel costs, as well as bigger costs, like computers or salaries). Alternatively you may want to talk to colleagues who have obtained funding and ask to see their proposals and budget sheets. This may be important if you are a lone worker and/or have little prior experience in creating and managing budgets. If you are able to find colleagues who have skills in this area to help monitor your budgeting and finances this may be a useful secondary level of monitoring to ensure you stay in control of and accountable for any monies used within your work.



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**TABLE 2.5** Examples of ground rules used at existing conferences and workshops

Conferences that Work—the Four Freedoms	Lost Levels four-hour gaming unconference, US, 2015	1st Non-Monogamies and Contemporary Intimacies Conference, Lisbon, 2015	Electromagnetic Field Event, Code of Conduct, UK, 2016	From “Respect differences? Challenging the common guidelines in social justice education” by Özlem Sensoy and Robin DiAngelo, <i>Democracy In Education</i> (2014), 2, 22.	Open Space Technology (1985)
In an empowering environment, everyone has the following freedoms:	<ol style="list-style-type: none"> <li>1. Make space for others!</li> <li>2. Watch out for blocking views.</li> <li>3. Be an active listener.</li> </ol> <p>Also, You are amazing!</p> <ol style="list-style-type: none"> <li>1. You have the freedom to talk about the way you see things, rather than the way others want you to see.</li> <li>2. You have the freedom to ask about anything puzzling.</li> <li>3. You have the freedom to talk about whatever is coming up for you.</li> <li>4. You have the freedom to say that you don't really feel you have one or more of the preceding three freedoms.</li> </ol> <p>These four freedoms are deceptively simple but effective. It is our hope that this conference will provide you with such an empowering environment. You can help us by exercising your four freedoms while we are together.</p> <p>Further information:  <a href="http://www.conferencethatwork.com/index.php/event-design/2010/08/how-to-improve-your-conference-with-explicit-ground-rules">www.conferencethatwork.com/index.php/event-design/2010/08/how-to-improve-your-conference-with-explicit-ground-rules</a></p>	<ol style="list-style-type: none"> <li>1. Please keep your terminology simple such that it can be understood easily by [all delegates].</li> <li>2. Please don't assume that people will be familiar with the norms and conventions of your world.</li> <li>3. Please don't make assumptions about people themselves.</li> <li>4. Please treat presenters with respect.</li> <li>5. Please try to frame questions and discussion points in a way which leaves room for other people to contribute.</li> <li>6. Please try to frame questions and discussion points in a way which leaves it open that other people may disagree with you.</li> <li>7. Please provide content warnings if the material you are sharing has the potential to be upsetting or personally triggering.</li> <li>8. Keep what people share confidential after the event.</li> <li>9. Please use social media generously.</li> <li>10. “Deal with problems” with event organisers directly.</li> </ol> <p>Further information:  <a href="https://nmicoconference.wordpress.com/guidelines-for-academicactivist-spaces">https://nmicoconference.wordpress.com/guidelines-for-academicactivist-spaces</a></p>	<ul style="list-style-type: none"> <li>• Do not engage in homophobic, racist, transphobic, ableist, sexist, or otherwise prejudiced behaviour.</li> <li>• Do not harass people.</li> <li>• Unconsented physical contact or sexual attention is harassment.</li> <li>• Dressing or acting in a certain way is not consent.</li> <li>• EMF is a shared space, but every attendee's personal space is still their own. If you are asked to leave someone alone, or to leave a village, you are expected to respect this.</li> <li>• Some attendees may not want to be filmed or photographed. Respect their wishes.</li> <li>• Aggression and elitism are not welcome—nobody should be afraid to ask questions.</li> </ul> <p>If you break these rules, we may expel you from the event without a refund, and we may also ban you from future events run by us.</p> <p>If you are being harassed or witness a breach of this code of conduct, you can get in touch with us in any of the following ways:</p> <p>Find a member of event staff (they'll be clearly identifiable) and let them know. All our volunteer staff will be briefed on how to handle a harassment situation. OR Drop us an email at . . .</p>	<p>http://democracyeducationjournal.org/home/vol22/iss2/1</p> <p>Strive for intellectual humility. Be willing to grapple with challenging ideas.</p> <p>Differentiate between opinion—which everyone has—and informed knowledge, which comes from sustained experience, study, and practice. Hold your opinions lightly and with humility.</p> <p>Let go of personal anecdotal evidence and look at broader group-level patterns.</p> <p>Notice your own defensive reactions and attempt to use these reactions as entry points for gaining deeper self-knowledge, rather than as a rationale for closing off.</p> <p>Recognize how your own social positionality (e.g., race, class, gender, sexuality, ability) informs your perspectives and reactions to your instructor and those whose work you study in the course.</p> <p>Differentiate between safety and comfort. Accept discomfort as necessary for social justice growth.</p> <p>Identify where your learning edge is and push it. For example, whenever you think, <i>I already know this</i>, ask yourself, <i>How can I take this deeper?</i> Or, <i>How am I applying in practice what I already know?</i></p>	<p>Whoever comes are the right people.</p> <p>Wherever it happens is the right place.</p> <p>Whatever happens is the only thing that could have.</p> <p>Whenever it starts is the right time.</p> <p>When it is over, it is over.</p> <p>The one law of OST is the Law of Mobility. If you are not learning or contributing then take yourself where your time will be better spent.</p>



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*Making links with your finance department can be invaluable. I liaise with the finance staff in the research office at my college, and I find talking to them when I'm thinking of applying for research funding, and involving them with the proposal can mean I get the financial parts right, and they remind me of the correct way to get research signed off too. (Bina, research manager)*

Not all projects will require funding, or it may be your role within a project does not involve finances. It is also worth noting funding may take a variety of forms—traditionally we may think of grants to cover research (large or small studies) but equally funding may be available for meetings, establishing networks, further study (including Master's level and PhD research), public engagement, science communication and outreach work. You may also find specific calls for funding, competitions or specific streams of work advertised through networks, charities, or research funding bodies.

As with previous suggestions about picking a research question, method and analysis that will match your skills and time, looking at what funding you need can help direct the work you do. It can also be a reminder to think creatively—if funding isn't available for a large-scale piece of work (or if you are unable to manage such a project at this time), would a different stream of funding or pot of money better suit your needs?

There are some fairly easy ways to lose out on getting a research proposal accepted or funded, as outlined by Robson and McCartan (2016, p. 392) under the heading “Ten ways to get your proposal turned down”:

1. Don't follow the directions or guidelines given for your kind of proposal. Omit information that is asked for. Ignore word limits.
2. Ensure that the title has little relationship to the stated objectives; and that neither title nor objectives link to the proposed methods or techniques.
3. Produce woolly, ill-defined objectives.
4. Have the statement of the central problem or research focus vague, or obscure it by other discussion.
5. Leave the design and methodology implicit; let them guess.
6. Have some mundane task, routine consultancy or poorly conceptualised data trawl masquerade as a research project.
7. Be unrealistic in what can be achieved within the time and resources you have available.



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8. Be either very brief, or, preferably, long-winded and repetitive in your proposal. Rely on weight rather than quality.
9. Make it clear what the findings of your research are going to be, and demonstrate how your ideological stance makes this inevitable.
10. Don't worry about a theoretical or conceptual framework for your research. You want to do a down-to-earth study so you can forget all that fancy stuff.

*My top tip for researchers is read the instructions! Or the manual. Or the syllabus. Or the handbook. Or any checklist or guidelines available to you. What you need to do—and what is expected of you—is usually set out somewhere for you to follow. Ignoring this very basic point is the main reason why many studies fail. (Gwennan, ethics committee board member)*

If you are carrying out a project for an undergraduate or postgraduate degree, you usually don't need to worry about funding for a study—if extra money is required, your supervisor should be able to help and advise you with this. For other research you will need to think about who is going to pay for it (Carter, 1997). Some studies

**TABLE 2.6 Resources for funding**

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The Research Funding Toolkit website [www.researchfundingtoolkit.org](http://www.researchfundingtoolkit.org)

Vitae's *Where to find sources of academic research funding* [www.vitae.ac.uk/researcher-careers/pursuing-an-academic-career/research-funding/where-to-find-sources-of-academic-research-funding](http://www.vitae.ac.uk/researcher-careers/pursuing-an-academic-career/research-funding/where-to-find-sources-of-academic-research-funding)

*The research funding toolkit: How to write successful grant applications*, Jacqueline Aldridge & Andrew M. Derrington (2012), Sage

*Gaining funding for research: A guide for academics and institutions*, Dianne Berry (2010), Open University Press

*Developing a winning grant proposal*, Donald C. Orlich & Nancy R. Shrope (2012), Routledge

*Successful grant proposals in science, technology and medicine: A guide to writing the narrative*, Sandra Oster & Paul Cordo (2015), Cambridge University Press

*Writing bids and tenders*, Deborah E. Oxberry, Kindle edition

*Win that bid: Tender writing made easy*, Daniel Anderson (2014), Digital Pennies

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are completed on a shoestring, with everyone volunteering their time to help out. However, this is not ideal, so try to get funding wherever possible. It's acknowledged that getting research funded is very difficult (Hopkin, 1998; Schepers, Sadler & Raun, 2000), although guides are available (see Table 2.6) (Carter, 1997; Reif-Lehrer, 1995). Funding may be found via charities and large-scale funding organisations, through governments, or specific calls for tender from industry. Some funding is contingent on you being linked to a university or other research institution, making it more difficult for independent researchers to apply for monies; while other funding is open to all researchers in any location. Usually you can expect to be bidding for financial support in competition with other researchers/teams.

**TABLE 2.7 Checklist for obtaining funding**

- 
- Do I have a clear, well-argued, and well-supported study idea?
  - Have I chosen the most appropriate method to answer my research question?
  - Does the research team contain people who have already obtained funding for research and seen studies through to a successful completion?
  - Is the research budget reasonable (not underselling or overselling itself)?
  - Is it realistic that the research will be delivered on time and to budget?
  - Will I offer relevant training, pay and support to staff so their tasks are completed?
  - Will the research have relevant and deliverable outcomes?
  - Am I applying to the appropriate charity or funding body, at the right time?
- 

Table 2.7 gives a checklist for obtaining funding.

*In my experience studies don't get funded for the following reasons. They are vague, badly described, or talk about research that seems unethical or unfeasible in the timescale suggested. If you've continually gone over time or budget on previous studies this can count against you, as can applying to the wrong funding body. Most often research goes wrong, though, because although you get the money to do it, it's not been well designed or thought out, and the staff working on the project aren't supported. This means work doesn't get done, or it turns out the*



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*original idea just doesn't work in practice. My advice is to sort out the study and pilot it first before trying to get money, because there's no point in having a fantastic grant if you just can't deliver what you promised. (Mike, professor)*

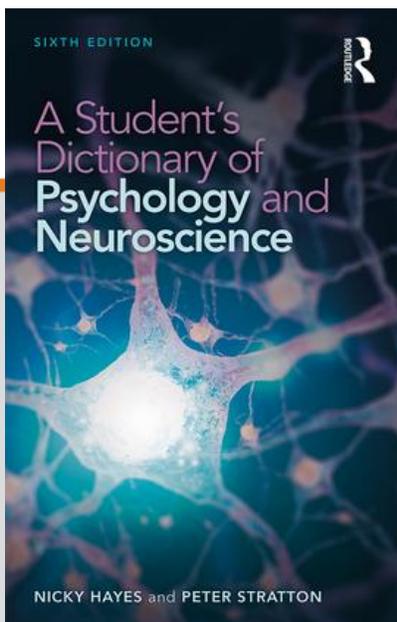
This chapter has summarised the main issues to consider when thinking about a study. The next chapter builds on this, and focuses on how to get your idea into action.



CHAPTER

3

# HOW TO WRITE AN ESSAY



This chapter is excerpted from  
*A Student's Dictionary of Psychology and Neuroscience*  
by Nicky Hayes, Peter Stratton.

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# HOW TO WRITE AN ESSAY

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An essay has two purposes. One is that it is an attempt to answer a question (in French, *essayer* means to try). The other is to show off to the person marking the essay just how much you know about the subject and how good you are at organising that knowledge.

## WORK OUT YOUR ANSWER

So the first thing you need to consider when choosing an essay topic is what your answer should be. Not the details of your answer – its essence. Ask yourself what you would say if a friend asked you that question in the cafeteria (it may be unlikely, but that's what your imagination is for!). If your answer would be 'I dunno', then that probably isn't the right essay question for you – either that, or you haven't really thought about it enough.

To write a good essay, you need to be able to adopt a position – to give an answer to the question – and then describe arguments or evidence which show that your position or answer is the best one to adopt, or at least a really good one. The idea is to convince other people that you really know what you are talking about. That means giving your essay a good, clear structure, and making sure that what you have said all leads to the conclusion you draw – in other words, your answer.

Essays work best if you plan them out. If you don't, you can end up just rambling, with no clear direction. But once you know the short answer to your essay question, you know where your arguments are going, and what your conclusion will be. So that will help you to stay on track, and at that point you can start planning your essay.

## SELECT YOUR EVIDENCE

Your essay needs to be organised, and for that you need to use paragraphs. So the best way to plan your essay is as a list of paragraphs. Each paragraph should make just one point, and back it up with some kind of argument or evidence – whatever counts as important in the particular subject you are taking.

For example, in English literature, the evidence you would use would be reference to things in the text or direct quotations. In creative writing, it would be examples drawn from your ideas, imagery or experience. In history, it would be reference to source material of some kind. In psychology, it would be reference to research studies, or critiques that have challenged research evidence. Learning any



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subject involves learning what counts as evidence and what doesn't, and by the time you are writing an essay, you should have a pretty fair idea of what kind of evidence matters for that particular subject.

## PLAN YOUR PARAGRAPHS

A paragraph states an idea and then amplifies it. Usually, it will be between 50 and 100 words long. (How long paragraphs are depends on how much you need to say to amplify the point that it is making.) Knowing this means that you can work out how many paragraphs you will need, according to how long your essay is supposed to be. A 500-word essay will usually need about eight paragraphs, while a 1,500-word essay will need about 12–18 or so. If it's an exam essay, begin by working out how much time you are supposed to give to the essay. In some exams, you can calculate this by how many marks are given to the question, by comparison with the other questions you have to answer. In all-essay exams, just divide the time of the exam by the number of essays you need to write. Then deduct five minutes per essay for planning (believe us, it's worth it!) and allow five minutes for writing each paragraph. So 45 minutes of exam time means eight paragraphs plus five minutes' planning time.

Bearing that in mind, you can make up your essay plan as a list of paragraphs. Two of them are done for you: the first, where you introduce the subject and outline the main argument you are making – if you like, where you give the short answer to the question – and the last, where you sum up how all that evidence shows that your short answer was the best answer for this question. In between comes the detail of your essay, so on the plan, number your paragraphs and list briefly what each point is going to be. Don't go into any details – a one-word reminder is plenty.

Remember, though, that in many essays, you don't just want to give your own arguments – you also need to show that you are aware of any opposing ideas or other arguments which might lead to different conclusions. A paragraph describing one of those would begin by stating what it was (to prove that you know it) and then give evidence or arguments for why it is wrong, or irrelevant to this particular question. So some paragraphs will be criticising other ideas, and some will be backing up your own.

In a well-balanced essay, that would normally be about half and half, but it can vary depending on your subject. In a science essay, for example, the ideas you are criticising might just be very old-fashioned ones, which would only need a



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couple of paragraphs to describe, or in an English essay you might concentrate more on producing the evidence to support your own idea and not bother as much with what other people have said. But if you are writing about a controversial topic, or one where people have very strong views, then you definitely need to show that you are familiar with the arguments on both sides of the case – and then challenge the arguments of the side that you disagree with, saying why you don't think they should really count.

## THE ESSAY TASK

How you go about organising your paragraphs and deciding what to put into them depends on the task that your essay is trying to do. Often, the essay title itself will give you an idea of how you are meant to go about writing the essay. Here is a list of some of the more common essay tasks, and what they expect you to do.

## COMPARE AND CONTRAST

Write about the similarities (compare) and the differences (contrast) between two things. That means writing some paragraphs describing things they have in common, and roughly an equal number of paragraphs describing ways that they are different.

## CRITICISE

Write about the weak points of the topic or idea that you are writing about, or say what you think is wrong with it. Describe criticisms that other people have made, as well as giving some of your own if you can. But remember to begin with at least one paragraph showing that you do understand the idea or thing that you are criticising.

## DISCUSS

Write about both the good points and the bad points of your topic, and try to look at whether there are any implications or conclusions that would follow naturally from it. Try to look at it from more than one point of view.



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Excerpted from *A Student's Dictionary of Psychology and Neuroscience*

## DESCRIBE

Write about the topic plainly and simply. Give as much detail as you can in the time or number of words, but stick to the plain facts – don't give your own opinions, or if you do keep them for a very limited contribution right at the end.

## EXPLAIN

Give a set of reasons for why something happens or has come about. That often means writing about the stages or steps which have led up to it.

## ILLUSTRATE

Give specific examples that highlight or amplify the particular topic which you are writing about (but don't forget to describe the topic first). Do not draw pictures as your answer, unless you are sure that this is appropriate. It usually isn't.

## OUTLINE

Simply describe the main facts of the topic, but leave out all of the unimportant details. Give as much information as someone would need in order to be able to understand the most important features of the topic you are describing.

## WRITE CLEARLY

If you follow this advice, your essay plan will end up as a list of paragraphs, each of which is making a different point. Once you've got your plan, you can expand all the points into paragraphs, and while you're writing you'll know pretty well what you are going to say next. That means that you can keep your arguments clear and incisive, and avoid unnecessary repetition.

Make sure, too, that you really have said what you mean to say. Even a small difference in spelling can change the meaning of a sentence so it looks as though you mean something completely different. To affect something, for example, means to influence it. But to effect something means to bring it about or make it happen. Confusing the two won't be picked up by a spellchecker because they are both real words. You don't want a little spelling mistake to make it look as though you're talking nonsense, do you?



# HOW TO WRITE AN ESSAY

Excerpted from *A Student's Dictionary of Psychology and Neuroscience*

## GETTING IT RIGHT

Not only that, but carelessness with grammar or spelling makes a really bad impression. So here are 16 of the most common spelling and grammatical problems – errors which you need to avoid and rules which you need to follow:

1. Be consistent in singular and plural. Not 'there is 23 of them'.
2. Latin words that end in 'a' tend to be plural (e.g. data and media). Therefore,
3. 'data are reported'.
4. Apostrophes give endless trouble. They indicate either a possessive (something which belongs to the noun concerned) or an abbreviation (a word or part of a word which has been shortened). But APOSTROPHES NEVER INDICATE A PLURAL! 'The department's student's ...' implies they only have one student and you are about to be told about something that person possesses. If the possession refers to several people, then the apostrophe comes after the s (e.g. if it belongs to several students, it is the students' opinion). If the word is already plural, such as people, the apostrophe comes after the plural word: people's party. Sometimes the spelling changes: the plural of family is families, but the possessive relating to one family is family's. The possessive of many families is families'.
5. The usual use of an apostrophe as in 's is as an abbreviation for his, hers or its (e.g. 'A student's opinion' = one student – her opinion).
6. The other main use of an apostrophe is when it is used to indicate an abbreviation, or something missing, as in don't for 'do not'.
7. 'Its' is already possessive. It only gets an apostrophe if it is functioning as an abbreviation of 'it is', as in 'it's a lovely day'.
8. 'There' is a place, 'their' refers to possessions. So do not write 'we solved there problems'.
9. Sentences in the form of a question should have a question mark at the end.
10. Try to split up sentences that have become too long and complicated. It's generally a good idea to do the same for paragraphs when they become too long, too.
11. When a sentence or, worse, a paragraph starts with 'this', it is often unclear what, in the preceding material, it refers to. Think of it as a vague hand-wave backwards to what you have recently written. Make a rule to



# HOW TO WRITE AN ESSAY

Excerpted from *A Student's Dictionary of Psychology and Neuroscience*

avoid using 'this' unless you say what 'this' is, or unless it is so clear that there couldn't possibly be any other subject. This (referring to the first sentence of this paragraph) also reminds me that it is important to minimise the use of commas, but even more important to use them correctly.

11. While we're on the subject, A COMMA IS NOT THE SAME AS A FULL STOP! A comma indicates that you are developing, or amplifying, the idea behind your sentence. A full stop tells you that that particular statement or idea has been completed. If you want to say more, you should introduce the next idea – another point on the same topic, like this one – in the next sentence. Using commas when you should be using full stops makes you appear illiterate. That's not an impression you want to give to anyone, really.
12. 'Effect' and 'affect' often cause problems for psychology students. They have different meanings when they are used as nouns or verbs. For example, something can have an effect (noun). But if something 'effects a change' it means to bring about a change. Similarly, an affect (noun) means a feeling or emotion, while to affect things (verb) means to influence it. If in doubt, look up these words in the main text of this dictionary.
13. A similar confusion between noun and verb occurs with practice (noun) as in 'the practice of psychotherapy' and practise (verb) as when you 'practise your guitar solos'. People do not usually get confused between 'advice' and 'advise', which follow the same rule, so you may find you can use that to remember whether you want to say practice or practise.
14. For some reason, when writing about activating a response, instead of writing 'elicit' people often write 'illicit', which is an adjective meaning that it is underhand or illegal. Try not to confuse the two.
15. 'This finding highlights that value for money is an important issue for customers'. Do not use 'highlights' – it is a cop-out to save you thinking of the word you should really use. It makes the sentence ungrammatical, when it would have been simpler and more informative to have used 'shows' or 'suggests'. Or should it have been 'proves' or 'emphasises'?
16. Don't begin a sentence with 'So, ...' unless it is genuinely a logical conclusion from the sentence or paragraph you have just written. It should not be used as a general beginning for a topic, no matter how often you might hear people using it that way in everyday life.



# HOW TO WRITE AN ESSAY

Excerpted from *A Student's Dictionary of Psychology and Neuroscience*

## **PAY ATTENTION TO PRESENTATION**

Finally, make sure you present your essay neatly. In an exam, there's not all that much you can do, but do remember that you are trying to impress your examiner, and you won't do that if your handwriting is so bad that they can't decipher what you have written. If you are writing an essay for an assignment, make sure that you print it out, or if you really don't have access to a printer, write it out very neatly. Separate the paragraphs clearly, choose a clear font and a readable line spacing, and leave proper margins. It might not get you extra marks, but it all contributes to the impression that you really know what it is that you are supposed to be doing, and have made an effort to do it well. And that can only be a good thing!

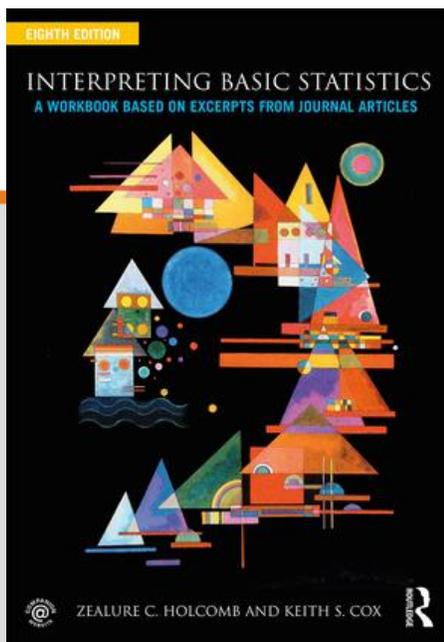
Happy writing!



CHAPTER

4

# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY



This chapter is excerpted from  
*Interpreting Basic Statistics*  
by Zealure C. Holcomb, Keith S. Cox.  
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# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

## INTRODUCTION

Most of today's research is based on numbers in one way or another. The numbers might be heart beats per minute, or represent DNA type, or they might reflect beliefs about the afterlife. No matter what the numbers are about, they are still numbers. And numbers have standard ways of working.

Statistics is the branch of math that deals with how groups of numbers behave. And since most research today involves groups of numbers, most research involves statistics. For some people, this is pretty intimidating. Research is hard enough to understand, but then statistics gets thrown into the mix! We could tell you to not be intimidated, but you probably would not believe us. In fact, at multiple points in our careers, we have been intimidated by the combination of research and statistics. So we probably should not be too preachy about not being intimidated. Instead, the aim of this workbook is to show you how to defang the complexity of statistics in research articles. With that skill, you can make sense of research findings across the social and behavioral sciences and beyond.

One thing to notice about this workbook is that we bite off a small bit of a research article and really chew on it. We do not worry about the full article because you do not have to understand everything in an article to understand anything in an article. We think this is a great way to approach the complexity of statistics in research articles. Take one thing at a time, and stick with it until you get it. We will illustrate this method throughout the book.

The big idea in Unit 1 is how to understand basic aspects of a set of numbers, often called a dataset. A short list of straightforward math ideas can go a long way in revealing important features of a dataset. Ideas like percentage or cumulative percentage can tell you a lot about a variable. To boot, these ideas do not rely on technical or sophisticated math. In fact, you probably learned the math for percentage in elementary school. This is a point to be encouraged about. Hopefully, you will feel that way after you have worked through Unit 1.

### 1.1

#### Percentage I: Adolescent Substance Abuse

#### STATISTICAL GUIDE

Percent means per one hundred. For instance, say there are 100 residents in a town and 60% are left-handed. This means 60 per one hundred are left-handed, or 60 in total are left-handed. Now, you do not have to have a group size of 100 to use the idea of percent.



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

Say the town down the road has 212 residents and 50% are left-handed. To figure out the total number of left-handed residents in this town translate the 50% into a decimal. (Do this by moving the decimal place over two places to the left: from 50.0% to 0.50.) Now multiply 0.50 times the total number of residents in the town ( $0.50 \times 212$ ), which equals 106.

To calculate a percentage, divide the part by the whole and multiply by 100. For instance, if 8 of the 234 seniors in a high school reported having tried cocaine, then 3.4% reported cocaine use ( $8/234 = 0.0342$ ;  $0.0342 \times 100 = 3.42$ , which is written as 3.42% or 3.4%).

## EXCERPT FROM THE RESEARCH ARTICLE<sup>1</sup>

The adolescent clients within three sites of a drug-free residential treatment community (TC) were surveyed. Daytop Village has a network of adolescent treatment programs located in upstate New York (Adolescent Diagnostic Unit, Foxrun, and Millbrook) that utilize a modified TC approach. . . .

The questionnaire used in this study consisted of 102 questions and was divided into four sections. . . .

The third section inquired about past drug use, including lifetime history and perceived greatest problem drug. . . . The youths were queried as to greatest problem drug among 12 substances (marijuana, hallucinogens, alcohol, benzodiazepines, depressants, noncocaine stimulants, cocaine, heroin, prescription opiates, inhalants, "club drugs," and nicotine).

Table 1  
*Drug Use Characteristics of Adolescent TC Sample (N = 181)*

Substance	Greatest problem drug %	Lifetime use <sup>a</sup> %
Marijuana	65.7	99.4
Nicotine	11.0	81.8
Alcohol	6.1	94.5
Cocaine/crack	5.5	34.8
Club drugs	3.9	32.0
Heroin/illicit methadone	3.3	13.8
Hallucinogens	3.3	31.5
Benzos/depressants	1.2	31.5
Inhalants	0	9.4
Prescription opiates	0	25.4

<sup>a</sup>Percent of sample reporting any use prior to TC admission.



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

## STUDY QUESTIONS

### Factual Questions

1. What percentage of the clients reported ever using inhalants?
2. What percentage of the clients reported alcohol as their greatest drug problem?
3. Which substance has the highest percentage for lifetime use?
4. Expressed as a percentage, what was the difference between marijuana and nicotine as the greatest drug problem?
5. How many of the 181 study participants reported nicotine as their greatest drug problem? (Round your answer to the nearest whole number.)
6. How many of the 181 study participants reported ever using alcohol in their lifetime? (Round your answer to the nearest whole number.)
7. How many of the 181 study participants reported ever using inhalants in their lifetime? (Round your answer to the nearest whole number.)
8. What is the sum of the percentages for the greatest drug problem?
9. If you sum the percentages under the column labeled “Lifetime use,” you get considerably more than 100%. Does this make sense? How is this possible?
10. Would you feel comfortable in generalizing the results reported here to the general population of adolescents in upstate New York? Explain.
11. Do any of the response rates for “Greatest problem drug” or “Lifetime use” surprise you? Why? Why not?

### NOTE

1. Solhkhah, R., Galanter, M., Dermatis, H., Daly, J., & Bunt, G. (2009). Spiritual orientation among adolescents in a drug-free residential therapeutic community. *Journal of Child & Adolescent Substance Abuse*, 18, 57–71. Reprinted by permission of Taylor & Francis LLC.

## 1.2

### Percentage II

#### Nonsuicidal Self-Injury

### EXCERPT FROM THE RESEARCH ARTICLE<sup>1</sup>

Participants included 508 students (51% female) in Grades 6 (35%), 7 (30%), and 8 (35%) at the outset of the study attending a middle school in a moderately sized, middle-class community in the northeastern United States.



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

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Engagement in NSSI (nonsuicidal self-injury) was determined by an affirmative response to the item “Have you harmed or hurt your body on purpose (e.g., cutting or burning your skin, hitting yourself, or pulling out your hair)?” For participants who endorsed engaging in NSSI, follow-up questions were provided to assess frequency of the behavior within the past year and to inquire whether the participant had made a suicide attempt in the past year (90% reported they did not, suggesting that NSSI indeed involves nonsuicidal self-injury).

It was anticipated that engagement in NSSI would be associated with engagement in other health-risk behaviors, including substance use, eating pathology, and sexual risk behaviors.

Table 1  
*Correlates of Nonsuicidal Self-Injury (NSSI) in Percentages*

	NSSI group ( $n = 49$ )	Non-NSSI group ( $n = 459$ )
Ever used drugs to get high	46.7	4.4
Smoked cigarettes in the past year	73.3	28.0
Had sexual intercourse in the past year involving drinking or using drugs beforehand	33.3	11.9
Describe self as overweight	45.9	25.8
Fasted to lose weight or keep from gaining weight in the past month	43.3	7.9
Binged in the past year	76.3	41.1

## STUDY QUESTIONS

### Factual Questions

1. Which grade level had the smallest number of participants?
2. How many of the 508 students were female? (Round your answer to the nearest whole number.)
3. As a percent of the sample, how many more sixth graders are there than seventh graders? As a whole number, how many more sixth graders are there than seventh graders?



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

1. Of the six categories of healthrisk behaviors in Table 1, which category was reported most often by the NSSI group?
4. For how many of the six categories of health-risk behaviors did the NSSI group have a higher percentage than the non-NSSI group?
5. What is the percentage difference between the two groups for “Ever used drugs to get high”?
6. What number of participant in the NSSI group reported they smoked cigarettes in the past year? (Round your answer to the nearest whole number.)
7. What number of participants in the non-NSSI group reported they smoked cigarettes in the past year? (Round your answer to the nearest whole number.)
8. In terms of numbers of participants did more of the students in the NSSI group or more of the students in the non-NSSI group report having binged in the past year?

## Questions for Discussion

1. For the non-NSSI group, the percentages in Table 1 sum to more than 100%. Explain how this is possible.
2. Does it surprise you that higher percentages of the participants in the NSSI group engaged in health-risk behavior than participants in the non-NSSI group? Explain.

## NOTE

1. Hilt, L. M., Nock, M. K., Lloyd-Richardson, E. E., & Prinstein, M. J. (2008). Longitudinal study of nonsuicidal self-injury among young adolescents: Rates, correlates, and preliminary test of an interpersonal model. *Journal of Early Adolescence* 28, 455–469. Reprinted by Permission of SAGE Publications, Inc.

## 1.3

### Frequency Distribution with Percentages Frequency of Dream Content

## STATISTICAL GUIDE

A *frequency distribution* helps to organize and summarize data. It is a statistical table that shows the number of cases (or frequency of cases) that obtained each score. Typically, the scores are listed in order (like low to high) in the first column,



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

and the numbers of cases are listed in the second column. In addition, the percentage of cases with each score is often also provided as part of a frequency table.

**Table 1.** Number of Typical Dream Themes Per Dream Report

Number of typical dream themes per dream report	Frequency	Percent
0	1,195	41.31%
1	1,045	36.12%
2	443	15.30%
3	150	5.18%
4	47	1.62%
5	13	0.45%

**Table 2.** Frequency Ranks of Typical Dream Themes ( $N=2,893$ )

Themes	Total sample	Ranks ( $N=2,893$ )
Flying or soaring through the air (11)	11.69%	1
Trying something again and again (3)	11.34%	2
Being chased or pursued (1)	8.95%	3
Sexual experiences (32)	7.29%	4
School, teachers, studying (31)	6.12%	5
Arriving too late (6)	3.98%	6
A person now dead being alive (35)	3.54%	7
A person now alive being dead (36)	3.46%	8
Being physically attacked (2)	3.15%	9
Swimming (7)	2.73%	10

Note: Only the top ten most frequent dream themes are shown from original version of Table 2.

(continued)



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

## EXCERPT FROM THE RESEARCH ARTICLE<sup>1</sup>

Previous studies indicated that various dream topics were reported by a relatively large portion of the sample. These so-called “typical dream themes” could be defined as dreams with similar contents reported by a high percentage of the people . . . Nielsen et al. (2003) developed the Typical Dream Questionnaire (TDQ) that, in the latest version, encompasses 56 dream items...

Overall, 2,015 women and 878 men participated in the study (total sample size:  $N = 2893$ )...

[T]he participants were instructed to report their last recent dream in a way as detailed as possible...

The dream reports were evaluated by a judge using the 56 dream themes of the TDQ. If a TDQ theme was present at least once, the dream was coded with 1, otherwise 0. Multiple themes per dream were possible...

## STUDY QUESTIONS

### Factual Questions

1. How many participants are in the study?
2. What percentage of participants identified as men and what percentage identified as women?
3. According to Table 1, what is the most common number of typical dream themes per dream report?
4. What is the frequency and percentage for your answer in number 3?
5. What percentage of the sample had three or more typical dream themes per dream report?
6. What percentage of the sample had 1 or fewer dream themes per dream report?
7. What dream theme occurred with the highest frequency? What percentage of the sample had this dream theme?
8. What percentage of the sample, at most, had one of the top three ranked dream themes?

### Questions for Discussion

9. Table 1 reports that the most common number of typical dream themes per dream report is 0. How can this be?
10. If you add up the percentages in Table 1, they sum to 99.98%. Why do you think they do not sum to 100%?



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

## NOTE

1. Mathes, J., Schredl, M., & Göritz, A. S. (2014). 'Frequency of typical dream themes in most recent dreams: An online study'. *Dreaming*, 24(1), 57. Copyright © 2014 by the American Psychological Association. Reproduced with permission.

## 1.4

### Cumulative Percentage and Percentile Rank Norms for a Spelling Test

#### STATISTICAL GUIDE

A cumulative percentage helps to illuminate where a score falls in a distribution. It indicates the percentage of examinees that scored at and below a given score. A cumulative percentage is also known as a percentile rank. For instance, if 40% of a group had scores equal to or lower than an examinee's score, then that examinee has a percentile rank of 40. Percentile ranks are usually rounded to whole numbers when reported.

Test makers often try out a test with a large group of examinees (known as the norm group) and then build a table such as the one in the excerpt below (known as a norms table). Those who subsequently take the test can convert their raw score (number of right answers) to a percentile rank using the table. In this way, the scores of later test takers are interpreted in relationship to how the norm group performed.

#### EXCERPT FROM THE RESEARCH ARTICLE<sup>1</sup>

This test is composed of 76 words with one or more letters missing. A short line indicates where the letter(s) should be inserted (e.g., exper\_ment). Words were selected from lists of the words most frequently misspelled by college students. Brief hints are provided in ambiguous or potentially difficult situations (e.g., capt n/military rank). The test is timed at 10 minutes.

A sample of 316 undergraduate university students was tested on the Spelling Component Test. Results from this administration were combined with the 386 subjects tested [earlier] to furnish a normative sample of 702 university students (407 females and 295 males). The normative distribution of scores, for the full sample and separated by gender, is given in Table 1, in terms of cumulative percentages.



# BASIC DESCRIPTIONS OF THE DATA:

## MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

Table 1

*Norms for the Spelling Component Test Based on 702 University Undergraduate Students*

Raw score	Cumulative Percentage		
	Females (N=407)	Males (N=295)	Total (N=702)
69–70	99.4	99.6	99.5
67–68	98.6	99.6	99.0
65–66	97.1	99.6	98.2
63–64	94.8	97.1	95.9
61–62	92.5	95.5	93.9
59–60	88.0	93.0	90.5
57–58	83.0	87.6	85.2
55–56	76.1	84.7	79.8
53–54	70.9	79.3	74.7
51–52	67.4	76.0	71.4
49–50	63.4	72.3	67.5
47–48	59.0	68.2	63.2
45–46	53.0	61.2	56.7
43–44	45.0	53.3	48.8
41–42	36.9	49.2	42.5
39–40	31.7	43.8	36.8
37–38	25.6	38.2	31.0
35–36	20.5	30.2	25.0
33–34	16.4	24.4	20.4
31–32	11.2	17.8	14.3
29–30	8.1	14.5	11.2
27–28	6.1	11.2	7.9
25–26	4.0	8.7	5.7
23–24	2.0	6.2	3.6
21–22	1.4	4.1	2.5
19–20	0.9	3.7	2.0
17–18	0.3	1.2	1.0
15–16	0.3	0.4	0.3



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

## STUDY QUESTIONS

### Factual Questions

1. What percentage of the females had scores at and below 27–28?
2. What percentage of the males had scores at and below 27–28?
3. Compare your answers to Questions 1 and 2. Based on these two answers, does it appear that females or males performed better on the spelling test? Explain.
4. Based on the total sample, what is the percentile rank for a person with a raw score of 34?
5. Based on the norms for males, what is the percentile rank for a male with a raw score of 34?
6. Based on the total sample, a percentile rank of about 85 corresponds to which raw scores?
7. What percentage of the females had scores of 38 or less?
8. What percentage of the males had scores of 38 or less?
9. If the test were being used for college admissions, would a female who had a raw score of 38 be better off if her percentile rank were derived from the female norms or the norms for the total sample (both males and females)? Explain.
10. If the test were being used for college admissions, would a male who had a raw score of 38 be better off if his percentile rank were derived from the male norms or the norms for the total sample (both males and females)? Explain.

### Questions for Discussion

11. The researcher states that there were 76 words on the test, but the highest score in Table 1 is 70. Speculate on the reason for this apparent discrepancy.
12. Suppose your professor administered this spelling test to you and offered to give you either your raw score only or your percentile rank based on your gender only. Which would you choose? Why?
13. The norms for the total sample are based on the responses of more women than men. Is this a problem? Explain.

### NOTE

1. Coren, S. (1989). The Spelling Component Test: Psychometric evaluation and norms. *Educational and Psychological Measurement*, 49, 961–971. Reprinted by Permission of SAGE Publications, Inc.



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

## 1.5

### Rate per 100,000: Alternatives to Percentage Monthly Suicide Rates

#### STATISTICAL GUIDE

Recall that percent is a *rate per 100*. When a characteristic is very rare, percentages can be awkward to read and interpret. For instance, 0.023% of the males in Canada committed suicide in a recent year. This is read as “twenty-three thousandths of one percent,” which is awkward to say and even more awkward to understand. Using *rate per 100,000* makes this number more understandable: For males in Canada, in a recent year, the suicide rate was 23 per 100,000. Researchers often present behaviors with very low frequencies using rate per 100,000 for ease of understanding and comparison.

To convert a very small percentage to a different rate, use the following multipliers:

<i>If you want to convert a percentage to this rate:</i>	<i>Multiply the percentage by this number: (Multiplier)</i>	<i>Example (Canadian male suicide rate)</i>
Per 1,000	10	$0.023\% \times 10 = 0.23$ per 1,000
Per 10,000	100	$0.023\% \times 100 = 2.3$ per 10,000
Per 100,000	1,000	$0.023\% \times 1,000 = 23$ per 100,000
Per 1,000,000	10,000	$0.023\% \times 10,000 = 230$ per 1,000,000

To convert some other rate to a percentage, use the following divisors:



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Excerpted from *Interpreting Basic Statistics*

<i>If you have one of the following rates and want to convert it to a percentage:</i>	<i>Divide the rate by this number: (Divisor)</i>	<i>Example (Canadian male suicide rate)</i>
Per 1,000	10	0.23 per 1,000 becomes: $0.23 \div 10 = 0.023\%$
Per 10,000	100	2.3 per 10,000 becomes: $2.3 \div 100 = 0.023\%$
Per 100,000	1,000	23 per 100,000 becomes: $23 \div 1,000 = 0.023\%$
Per 1,000,000	10,000	230 per 1,000,000 becomes: $230 \div 10,000 = 0.023\%$

## EXCERPT FROM THE RESEARCH ARTICLE<sup>1</sup>

Homicide rates in the United States have increased from one per hundred thousand at the beginning of the twentieth century to six per hundred thousand at the beginning of the twenty-first century.

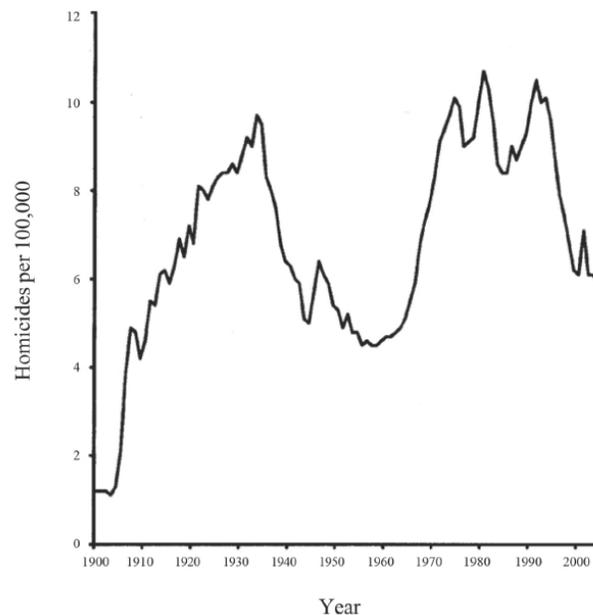


Figure 1. U.S. homicide rates from 1900–2004.



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

## STUDY QUESTIONS

### Factual Questions

1. The homicide rate in 1920 was approximately 6 per 100,000. Expressed as a percentage (per 100), what was the homicide rate in 1920?
2. Is your answer to Question 1 more or less than one percent?
3. The homicide rate in 1909 was approximately 4 per 100,000. Expressed as a percentage (per 100), what was the homicide rate in 1909?
4. Convert your answer to Question 3 to a rate per 1,000,000.
5. Suppose 0.15% of individuals committed a particular crime in a given year. How many individuals per 1,000 committed that crime?
6. For the percentage in Question 5, how many individuals per 10,000 committed that crime?

### Questions for Discussion

7. There is considerable fluctuation in the homicide rates from 1900 to 2000. How would you describe the homicide rate in 2000 in relation to rates across the 20th century? What do you make of the variations in the homicide rate in America?
8. If you were the director of the FBI's Homicide Taskforce, how might you use the information in Figure 1 to try to lower the homicide rate in the United States?

### NOTE

1. Zagar, R. J., Busch, K. G., Hughes, J. R., & Arbit, J. (2009). Comparing early and late twentieth-century Boston and Chicago male juvenile offenders: What changed? *Psychological Reports*, 104, 185–198. Reprinted by Permission of SAGE Publications, Inc.

## 1.6

### Nominal and Rank Order Data: Scale of Measurement I PTSD, Substance Use, and Risky Sexual Behaviors

#### STATISTICAL GUIDE

There is a question that is often overlooked when starting a statistical analysis. It is a key question whenever data is involved. The question is simple: what kind of data is it? This question is sometimes referred to as *scale of measurement or level of measurement* because it relates to how a variable or outcome is measured. There



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

are four typical answers to this question in quantitative social sciences. This exercise will look at the first two, nominal and rank order, and the next exercise will look at the other two.

A *nominal* variable is one that puts responses in a limited set of categories. For this reason, it is also called a categorical variable. For example, most social science studies treat gender as a nominal or categorical variable. Respondents are given the option of selecting from several categories to describe their gender, usually just male or female. Affiliation with a political party is another example of a commonly measured nominal variable. In America, for instance, respondents are given the option of selecting Republican, Democrat, Green, Libertarian, or Other. The central feature of nominal data is that it puts responses into categories. It allows you to answer questions like “What percentage of Americans are in the Green Party?”

A major limitation to nominal data is that there are lot of statistical procedures you cannot use with nominal variables. Many procedures require that the data contain an idea of *more and less, higher or lower*. For example, it does not make a lot of sense to think of a man as having more gender than a woman. No, male and female are two examples of gender, but we do not think of them in terms of more and less gender. In contrast, *rank order* data does exactly this: the data tells you which responses are higher or lower, greater or lesser. During the fall, American college football has a weekly ranking of the top 25 teams. These rankings are an example of rank order data. The number one team is thought to be better than all the other teams, and the number two team is thought to be better than all other teams apart from the number one team, and so on. Rank order data is also called *ordinal level* data because you are putting the data in an order.

You might sometimes hear a variable described as *dichotomous*. This means that the variable has two levels or two options. If the two levels are categories without ranking, like male and female, then the variable is nominal. If the two levels include information about rank, then the variable could be ordinal or interval (see the next exercise).

Why does any of this matter? Because to understand any statistical analysis, you need to know what kind of data is being used.

Each of the following article excerpts contains examples of at least one nominal or rank order variable. Read the excerpts and find all examples of nominal and rank order variables. Caution: some of the variables in the excerpts are neither nominal nor rank order.



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

## EXCERPTS FROM RESEARCH ARTICLES

1. The final sample ( $n = 289$ ) was 89% male, 13% African-American, 1.5% Hispanic, 0.5% Native Hawaiian or other Pacific Island, and 85% White. The average age of study participants was 50.4 years ( $SD = 15.10$ ). Service era included 0.3% World War II, 0.8% Korea, 37.7% Vietnam, 16.9% Desert Storm/Desert Shield, 30.4% OEF/OIF, and 11.5% Other.<sup>1</sup>
2. Considering smoking status, we created a . . . variable coding four groups, namely (1) stable smokers who smoked both at T1 and T2; (2) quitters who smoked at T1 and did not smoke at T2; starters who initiated smoking by T2 but did not smoke at T1; (4) stable non-smokers who smoked neither at T1 nor T2.<sup>2</sup>
3. Demographic Characteristics. These items included age (in years), gender, ethnicity (indicator coded as Non-Hispanic White, Hispanic, African-American, Mixed Ethnicity, or Other [Asian, American Indian/Native American, or “other”]), and whom the student lives with (both parents, only mother, only father, sometimes mother and sometimes father, other, or alone; coded as living with both parents or not). Socioeconomic status was assessed by parent education and rooms per person in the home. Parent education was measured as the single highest value considered across both parents, as a 6-level variable ranging from “did not complete 8th grade” to “attended or completed graduate school”. Rooms-per-person was calculated as the quotient of total number of rooms (except kitchen, bathrooms, closets, or laundry rooms) divided by the number of people living in the home.

*Risky Sexual Behavior.* Participants also were asked about risky sexual behavior . . . Participants were asked “Was a condom used the last time you had sexual intercourse?” This item was coded as “yes”, “no”, or “I have not had sexual intercourse”. A second nominal variable was created for sexual intercourse while using alcohol or other drugs. Specifically, participants were asked: “During the past 30 days, how many times did you have sexual intercourse while using alcohol or other drugs?” (in increments of 5, from “0 times”, “1–5 times”, “6–10 times”, to “More than 30 times”, or “I did not have sexual intercourse”. This item was coded as “0 times”, “1 or more times”, or “I have not had sexual intercourse”.<sup>3</sup>



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

4. Lifetime use of alcohol without parental permission, cigarettes, and marijuana were each assessed with a dichotomous item (0 = no, 1 = yes) . . . Past year use of each substance was assessed with open-ended frequency (e.g., “How many times in the past year have you used alcohol/cigarettes/marijuana?”) and quantity items for alcohol and cigarettes (e.g., “On the days you drink alcohol/smoked cigarettes, about how many drinks/cigarettes do you have/?”) . . .<sup>4</sup>

## NOTES

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3. Sussman, S., Sun, P., Rohrbach, L. A., & Spruijt-Metz, D. (2012). ‘One-year outcomes of a drug abuse prevention program for older teens and emerging adults: evaluating a motivational interviewing booster component’. *Health Psychology*, 31(4), 476. Copyright © 2014 by the American Psychological Association. Reproduced with permission.
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## 1.7

### Interval and Ratio Data: Scale of Measurement II Depression, Life Satisfaction, and Reaction Time

#### STATISTICAL GUIDE

Beyond nominal and rank order, there are two further types of data—*interval* and *ratio*.

Interval data improves on rank order data because with interval data the distance between levels is quantifiable and translatable. For example, the Fahrenheit temperature scale is an interval scale. Going from 45 degrees Fahrenheit to 50 degrees Fahrenheit is the same interval as going from 53 degrees Fahrenheit to 58 degrees Fahrenheit. Each interval is five degrees, and five degrees means the same thing in each instance. Rank ordering does not tell you this kind of information. If Wednesday was hotter than Tuesday, you can rank order them in terms of temperature, but you do not know how much hotter Wednesday was than



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

Tuesday, you can rank order them in terms of temperature, but you do not know how much hotter Wednesday was than Tuesday. You need to have set *intervals* of measurement to do this. Many scales in the social sciences produce interval data.

*Ratio* data improves on interval data because it adds in the idea that zero on the scale means total absence of the thing the scale is measuring. For many scales, either there is not a zero or the score of zero does not mean total absence of the thing. For example, many self-report scales in psychology are constructed so that the lowest possible score is five or ten or even seventeen. Or take temperature. Zero degrees Fahrenheit is not the total absence of heat. There are negative temperatures below zero. So why does this matter? Consider an example. If a measure is on a ratio scale, then scoring a 10 is twice as much as scoring a 5. In this case it is easy to understand the relationship between a score of 5 and 10. But if the lowest possible score on a measure is a 5, then 10 is not really twice as much as 5, because 5 means something like zero. So what then is the relationship between a score of 5 and 10? It is harder to say, if the measure is on an interval scale. In general, ratio scores are easier to interpret because they include the idea of zero.

To sum up, there are four types of data: nominal, rank order, interval, and ratio. And each one gives you more information than the next: nominal < rank order < interval < ratio.

One final point: people often refer to the type of data *as scale of measurement or level of measurement*. When someone asks, “What is the scale of measurement. When someone asks, “What is the scale of measurement?” they are asking if the data is nominal, rank order, interval, or ratio.

Below there are further examples of the different kinds of data that is present in research articles. In each of the examples, identify every variable that is interval in nature and every variable that is ratio in nature.

## EXCERPTS FROM RESEARCH ARTICLES

1. Participants and partners were assessed at baseline, 6, and 18 months via clinic and home visits. The primary outcome was body weight, measured in street clothes with shoes removed using a calibrated digital scale (Tanita BWB 800) and recorded to the nearest 0.1 kg. Height was measured at baseline to the nearest centimeter using a calibrated, wall-mounted stadiometer.<sup>1</sup>



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

1. The mean duration of on-task behavior during the math task was generated from continuous behavioral codings of children's on-task behavior during the math task. On-task behavior was defined as visual attention directed towards the math worksheet . . . Any time a participant's gaze left the worksheet, he/she was considered off-task.<sup>2</sup>
1. The PTSD Checklist (PCL)-military version . . . is a 17-item self-report measure of PTSD symptoms . . . PCL scores range from 17 to 85 with higher scores indicating greater symptom severity.<sup>3</sup>
1. The Beck Depression Inventory-II (BDI-II . . .) is a 21-item . . . self-report depression inventory designed to assess symptoms and level of depression. The questionnaire consists of 21 items comprising a list of four statements each about a particular symptom of depression. Scores on the individual items range from zero to three. The respondent has to choose the statement that best represented his or her mood during the last 2 weeks. Total scores can range between 0 and 63 with higher scores reflecting higher levels of depression.<sup>4</sup>
1. The Satisfaction With Life Scale (SWLS) . . . assesses an individual's global satisfaction with his or her life. The scale is composed of five questions that are rated on a 7-point Likert scale. An example of an item is: "In most ways my life is close to my ideal." Total scores on the SWLS range from 5 to 35.<sup>5</sup>
1. According to both the scientific literature and popular media, all one needs to win a US presidential election is to be taller than one's opponent... We collected the heights of the US presidents and their opponents from [an encyclopedia source]. Since 1789, there have been 56 US presidential elections.<sup>6</sup>

## NOTES

1. Gorin, A. A., Raynor, H. A., Fava, J., Maguire, K., Robichaud, E., Trautvetter, J., Crane, M. & Wing, R. R. (2013). Randomized controlled trial of a comprehensive home environment-focused weight-loss program for adults. *Health Psychology*, 32(2), 128. Copyright ©2013 by the American Psychological Association. Reproduced with permission.
2. Antonini, T. N., Narad, M. E., Langberg, J. M., & Epstein, J. N. (2013). Behavioral correlates of reaction time variability in children with and without ADHD. *Neuropsychology*, 27(2), 201. Copyright ©2013 by the American Psychological Association. Reproduced with permission.
- Antonini, T. N., Narad, M. E., Langberg, J. M., & Epstein, J. N. (2013). Behavioral correlates of reaction time variability in children with and without ADHD. *Neuropsychology*, 27(2), 201. Copyright ©2013 by the American Psychological Association. Reproduced with permission.



# BASIC DESCRIPTIONS OF THE DATA: MEASUREMENTS AND FREQUENCY

Excerpted from *Interpreting Basic Statistics*

## NOTES

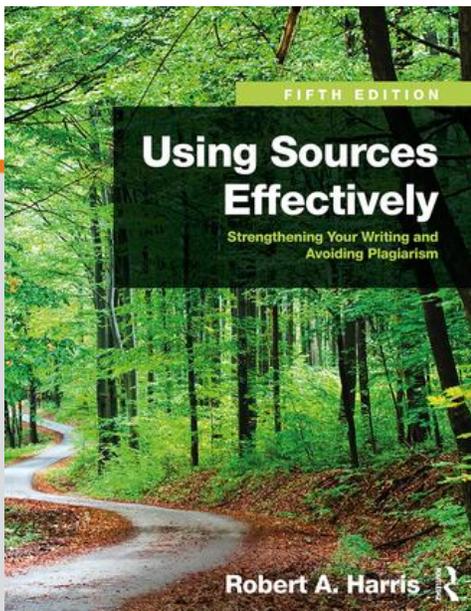
3. Gorin, A. A., Raynor, H. A., Fava, J., Maguire, K., Robichaud, E., Trautvetter, J., Crane, M. & Wing, R. R. (2013). Randomized controlled trial of a comprehensive home environment-focused weight-loss program for adults. *Health Psychology, 32*(2), 128. Copyright ©2013 by the American Psychological Association. Reproduced with permission.
4. Antonini, T. N., Narad, M. E., Langberg, J. M., & Epstein, J. N. (2013). Behavioral correlates of reaction time variability in children with and without ADHD. *Neuropsychology, 27*(2), 201. Copyright ©2013 by the American Psychological Association. Reproduced with permission.
5. Cox, K. S., Moulso, E. R., Venners, M. R., Defever, M. E., Duvivier, L., Rauch, S. A., . . . & Tuerk, P. W. (2016). Reducing suicidal ideation through evidence-based treatment for posttraumatic stress disorder. *Journal of psychiatric research, 80*, 59–63. © Elsevier.
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8. Stulp, G., Buunk, A. P., Verhulst, S., & Pollet, T. V. (2013). Tall claims? Sense and nonsense about the importance of height of US presidents. *The Leadership Quarterly, 24*(1), 159–171. © Elsevier.



CHAPTER

5

# FINDING, CHOOSING, AND EVALUATING SOURCES



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*Using Sources Effectively*  
by Robert A. Harris.

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# FINDING, CHOOSING, AND EVALUATING SOURCES

Excerpted from *Using Sources Effectively*

*What he said is true. But what he didn't say makes it a lie.*

—Proverb

Both the enormous quantity of information now available and its wide range of quality make the task of choosing sources wisely more important than ever. This chapter offers some guidelines and ideas for helping to choose useful and high-quality sources.

- Thinking about the purpose and audience of your paper will help guide your research.
- Choosing appropriate types of sources will give you better materials to use in your papers.
- Using a good search strategy will provide you with the sources you need.
- Evaluating the quality and credibility of the sources is important.

## 2.1 START BY UNDERSTANDING THE ASSIGNMENT

Before you grab a topic and rush off to the library or computer to look up something about it, read your paper assignment carefully, and if necessary, discuss it with your instructor. If you have a choice of topics, get your choice approved before you get deep into it. (You should do some preliminary research to determine if the topic is suitable for fulfilling the research assignment.) If your topic is assigned, think about the approach you want to take and make sure it conforms to the assignment. The following considerations will help you in your thought process as you plan and research and write.

### **What Is the Purpose of the Paper?**

Why, exactly, are you writing this paper (other than the fact that it has been assigned)? Think about some of these questions:

- Are you going to write a review, a summary, an analysis, a persuasive argument? A review or summary will be more focused on responding to the work of others, while an analysis or persuasive argument will contain much more about your own ideas. A review or summary will engage a limited number of works (or even one), often chosen for their important content as a whole. An argument might make use of ideas drawn from many works.
- Is the paper going to focus on reasoned argument or factual evidence (or both)? That is, should the discussion be more philosophical, drawing on logic and reasoning more than research, or will it need substantial amounts



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of supporting data from research and experimentation?

- Will you do a broad survey or engage in an intense examination of a small detail? For example, are you going to examine the changing views toward authority over time in a nation-state, or will you be explicating a sonnet?

How you answer these questions will determine which sources you look for. Your instructor will probably help you with these questions by providing some assignment guidelines, but you might want to clarify your purpose further to avoid unnecessary searching. Ask yourself, “Just what is it that I want to do in this paper, and what kinds of sources will help me?” and write out some notes that will help guide your research.

## What Are the Specific Requirements for the Paper?

Many instructors require research papers to include specific ingredients (if I may use that term). The idea behind such requirements is to show you the variety of sources that can be used in researching any subject. An example assignment might include something like this:

The research paper must include the use and effective incorporation of information drawn from

- two printed books, published within the last ten years,
- two scholarly journal articles (from printed or online journals),
- one personal interview, survey, or experiment,
- two credible Internet sources,
- one graph, chart, photograph, or other visual source.

Other requirements might specify the length of the paper (often in the minimum and maximum number of words), the approach to the topic (review, argument, pro and con, synthesis), and intermediate due dates (for a plan, a bibliography, a draft, and so on). Read and understand these requirements before you start. Never assume that your instructor wants a “generic research paper” or that you can read your instructor’s mind about the requirements.

## Who Is Your Audience?

The question, “Who is my audience and what does my audience expect?” is one of the most crucial and most often neglected questions any writer faces. Don’t be tempted to dismiss the question because it seems obvious that your instructor is



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the audience. There are several potential audiences for an academic research paper:

- your instructor, of course
- your peers (fellow classmates)
- your friends and dormmates
- a general, educated audience interested in the subject
- other professionals in the subject area

With regard to this last possibility, when you write upper division or graduate papers at a college or university, it is usually understood that you are preparing yourself for the Great Conversation—communicating with the other professionals and experts in your chosen field. So they are at least in theory part of your audience. This audience will expect excellence—careful thinking, thorough research, and apt use of that research.

If your assignment involves writing for a general audience, consider some issues like these:

- Will you need to include some general information about the topic to provide background or context?
- Will your audience understand the technical jargon that accompanies the subject?
- How will a general audience's preconceptions, knowledge, and lack of knowledge affect the sequence and approach you will need to take in order to be clear and convincing?

In a word, then, first think about what you want the final product to look like before you take the first steps in creating it. A powerful idea in problem-solving theory is to imagine that you have already solved the problem and then ask yourself what happened that enabled the solution to occur. Similarly, you might imagine having already written an excellent paper—that perhaps has won a class or campus-wide award, or even been accepted for publication—and then ask yourself how you worked on it and what you put into it that helped bring about such success.



# FINDING, CHOOSING, AND EVALUATING SOURCES

Excerpted from *Using Sources Effectively*

## 2.2 SELECT THE KINDS OF SOURCES YOU NEED

The saying, “All sources look alike on a computer screen,” cautions us to be careful to consider the wide range of materials available—both in kind and in quality—and to select those that best suit the task at hand. Resist the temptation to use just any sources that you locate; take some time to think about the kinds of information you need and how well those needs are met by the sources you locate.

### Choose the Kind of Information You Need

For building a solid research paper, you will need facts, of course, but you will also want expert interpretation of some of those facts, together with professional judgments about the importance of the information you are discussing. You may want reasoned arguments, creative ideas, personal examples, accounts of events, experiments, philosophical commentary, and so forth. Many sources contain more than one of these kinds of information, while others focus largely on one or two. If you keep in mind what kind of information you are seeking, you will be able to select sources more quickly and more effectively from among the items you locate.

### Take a Shortcut to Selection

You don't necessarily need to read an entire book or article before you can determine whether or not it will be useful. For a faster way to help you choose, try this:

- **Read the abstract.** Most scholarly articles have an abstract at the beginning, summarizing the findings or describing the main focus of the article. Reading the abstract will therefore let you know fairly quickly if the article will be useful for your topic.
- **Read the section headers.** Section headers will often reveal which parts of the article will be the most crucial to your paper. For example, if the findings of the study are the most important to you, then a section titled, “Description of the Data Set” or “Alternate Questionnaires Not Used,” could be skipped.
- **Read the first sentence of each paragraph.** Many scholars are accustomed to placing their topic sentences at the beginning of each paragraph, so by reading the paragraph opening sentences you can get a quick summary of each paragraph. Sentences of special interest signal you to read the entire paragraph.



# FINDING, CHOOSING, AND EVALUATING SOURCES

Excerpted from *Using Sources Effectively*

## Choose Sources of Appropriate Scholarship

Whether printed or online, publications exist along a range or at various levels of scholarliness. The concept of scholarliness refers to the level of expertise, learning, and evidence brought to bear on a subject as well as the intended audience and even the nature of the information itself. After all, the purpose of some information is to entertain—to tell a good story—rather than to get the facts right. Generally speaking, the more scholarly a work, the more care is taken with accuracy and completeness.

Table 2.1 will give you an idea of the range of informational materials and how their audiences and purposes vary.

You should not take this table too literally: There are not exactly four kinds of publications, and there are exceptions to most of the comments made here. However, the table can serve as a general model to give you a good sense of how the source, purpose, and quality of information vary. For much of your research, it is a good idea to restrict yourself to sources of a professional or substantive variety. Sometimes popular magazines offer useful material; but as entertainment values take on more importance than informational values, the degree of reliability of a source can sometimes suffer.

TABLE 2.1 VARIETY OF SCHOLARLINESS IN SOURCES

Professional	Substantive	Popular	Sensational
Written by academics, scientists, or experts	Written by staff writer or expert	Written by staff writer or freelance journalist	Written by staff writer or freelance writer
Audience is other academics or those trained in the field	Audience is the well-educated public	Audience is general reader	Audience is less well educated
Purpose is to share findings or present theories: to inform	Purpose is to inform and entertain	Purpose is to entertain and inform	Purpose is to entertain
Discussion is often highly specific and sophisticated	Discussion is more general, easier to understand	Discussion is general and simplified	Discussion is sensational and simplistic
Bibliography of sources is always included	Some sources are cited	Sources are often not cited	Sources are not cited
Article has been peer-reviewed or refereed by other scholars in the field	Article has been approved by an editorial board	Article has been approved by an editorial board or editor	Article has been approved by an editor



# FINDING, CHOOSING, AND EVALUATING SOURCES

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## Choose Appropriate Primary and Secondary Sources

A primary source is an original source of information. In other words, a primary source is a firsthand account, the fundamental source that all the secondary sources make use of. Examples of primary sources include:

- a historical document, such as the *Declaration of Independence*
- an experimenter's report, such as Stanley Milgram's *Obedience to Authority*
- a literary work, such as Samuel Johnson's *Rasselas*
- the official report from an NTSB aviation crash investigation
- an interview
- transcripts of court testimony
- a photograph or print from the Library of Congress
- data from the U.S. government's FedStats

A secondary source makes use of primary sources by summarizing, interpreting, commenting on, analyzing, criticizing, or otherwise working with them. Examples of secondary sources include encyclopedia articles that rely on a number of primary sources to construct a historical narrative, a work of literary criticism, and works that popularize newly reported discoveries or newly presented ideas. Many of the sources you find during your research will be secondary sources, because the Great Conversation continues as one scholar responds to another or updates what is thought or known about a primary source.

**You can be a primary source! If you conduct an interview, perform an experiment, write a blog, create artwork, or code a software app, you have created a primary source. If it's relevant to your paper, use it.**

Depending on the subject, the class level, the instructor, and a number of other factors, you may be using more of one kind of source than the other. Many instructors view the research paper as the construction of a secondary source, analyzing and commenting on a set of primary sources. In a literature course, you might use secondary sources to support your interpretation of a literary work (the primary source) as you create a secondary source of your own. In a history course, you might use both primary sources (laws, letters, diaries, works written during the period under study) and secondary sources (interpretive works by modern historians) to construct a paper. In the social and behavioral sciences, you might use primary sources (reports of empirical or original studies) and create some



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primary source material yourself by conducting your own experiment, observation, or interview.

When you have a choice, the use of primary sources is usually superior because you are dealing directly with the original work or evidence rather than seeing it through the lens of another interpreter. For this reason, relying on general encyclopedias for sources is often frowned upon because the articles in them are secondary sources or are themselves based on secondary sources. (Using an encyclopedia to get an overview, background information, ideas for the direction you want to take, or the consensus of current thought is an excellent idea. However, your research should then go far beyond that.)

One caution is in order, however. The mere fact that a source is primary or original rather than secondary does not automatically grant it immunity from evaluation. Eyewitness accounts might be biased, original experiments might be flawed, a historical photograph might be misleading (even though it has not been Photoshopped). Just as an eye opener, you might search a newspaper database or the general Web using the exact phrase “study was flawed” and examine the results.

## **SIDEBAR 2.1 ASK A LIBRARIAN**

**An excellent way to get help in locating and selecting good sources is to talk to a reference librarian. Librarians have expertise in searching for and evaluating information, and they are also familiar with the library’s collection of materials, the subject guides, online databases, and more. A suggestion such as, “You might check Special Collections for that,” or “If you can’t find that Web page anymore, check the Wayback Machine at the Internet Archive,” can be a priceless timesaver and resource. And there’s no better way to get pointed in the right direction than to discuss your research with someone who knows information sources inside and out. A chat with a reference librarian will also help you narrow down an overly broad or unfocused topic.**



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## Avoid Choosing a Source Only Because You Agree With It

If the sources you use are to add strength to your writing, they must be robustly credible, well reasoned, and fair. You may find sources that support the direction of your argument but that are unworthy of use because they lack the qualities that will gain your reader's confidence. When you refer to a source, you are saying something about the source (that it is worth listening to) and about yourself (that your judgment has approved its use in a formal presentation). In other words, a little of each source you use rubs off on you and your authorial reputation. If you use good sources, your reader will think better of you, seeing you as smart, educated, and discerning.

## Avoid Quoting Standard Dictionaries

Would you like to know the easiest way to make almost any instructor or educated reader cringe? Simply begin your paper with, "According to Webster's dictionary, the word \_\_\_\_ means. . . ." Why is this? Consider the reasons for not quoting a dictionary:

- **Readers have their own dictionaries.** It is assumed that readers have a desk dictionary handy, or that they can quickly go to any of several online dictionaries (such as [www.dictionary.com](http://www.dictionary.com) or [www.merriam-webster.com](http://www.merriam-webster.com)) and that if all that is wanted is a standard dictionary definition, they can look up the word themselves.
- **Most dictionary definitions are unhelpful.** Many definitions are, in fact, circular. "Wonderful: exciting wonder"; "Heartbreaker: a person causing heartbreak"; "Heater: an apparatus for heating." Even definitions that are not circular like these are often so condensed, generalized, or vague that they do not come near the meaning of the word as you are planning to develop it.
- **Dictionary definitions are descriptive and not prescriptive.** This means that if enough people use a word in a certain way, the dictionary will eventually list it, even though the word has not meant that in the past. For example, some dictionaries now list *imply* as one of the acceptable meanings of *infer*, and some list *continual* and *continuous* as having the same meaning.
- **You can write a better definition.** If you need the definition of an ordinary word, your own definition will be better. For everyday terms, such as *love*, *justice*, or *philanthropy*, a little thought and effort will produce a much better definition than that found in a typical desk or online dictionary.
- **Scholarly definitions are superior.** If you need a more specialized definition,



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consult a specialty dictionary, such as the *APA Dictionary of Psychology* (VandenBos, 2007). There are specialized works like this in many fields. You might also quote the definition of a key term from a scholarly article. Scholarly definitions are often extensive and focused, and therefore quite helpful.

- **Quoting a dictionary is a red flag.** Quoting a definition at the beginning of a paper implies to an educated reader that the writer does not know how to start a paper (or continue a thought) and is falling back on what amounts to a cliché, and a thoughtless one at that. A paper (or speech, for that matter) beginning with “According to Webster’s dictionary” tells the reader (or hearer) that the writer did not put much thought or research into the product and that there is little to be hoped for in the rest of the performance.
- **Noah Webster died in 1843.** The name *Webster’s Dictionary* is in the public domain and can be used by any publisher for any dictionary. It is now a generic brand and conveys no specific authority.

From these reasons, you can see that quoting a dictionary will actually weaken your writing, not strengthen it.

## 2.3 SEARCH STRATEGIES

When starting a research project, there is sometimes a temptation to sit down at a computer, bring up your favorite search tool, and type in the first word or phrase that occurs to you. Let’s take a few minutes to look at a better way of finding relevant and high-quality sources.

### Consider the Variety of Sources

The first task before you begin any research on your topic is to consider what a source is, where sources may be located, and which sources are likely to provide you with the answers or information you want. Let’s ask each of these questions in turn.

First, what is an information source? A source can indeed be a Web page you found by Googling your search topic, but there are many other kinds of sources. As Table 2.2 indicates, not all sources are available electronically. Some are physical, such as books on a library shelf, and some are even alive and human, as in a lecturer or



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interviewee. A source can be any person, or thing that supplies you with information.

Next, where are sources located? The temptation these days is to “find it online,” and ignore any source that cannot be found through a computer search. But as Table 2.2 indicates, sources can be found far and wide. Depending on the

**TABLE 2.2 SOURCES OF INFORMATION**

Audio recording	Online book, ebook
Blog	Online journal
Dataset	Photograph
Data table	Podcast
Drawing	Printed book
Experiment	Printed journal
Film	Radio broadcast
Graph	Speech or lecture
Interview	TV program
Magazine	Video
Newspaper	Web site or article

nature of your topic, you might want to make use of library card catalogs, library stacks, bookstores, museums, art galleries, lectures, phone interviews, or photographic or video archives.

Which sources are likely to provide you with the answers or information you want? Before you begin your research, take at least a few minutes to write a description of the kind of information you’re looking for. Then ask yourself, where is this information likely to be found? Some sources, such as refereed journal articles, will provide expert information and the analysis of experiments. Other sources, such as Weblogs (blogs), will provide raw data for analysis and commentary. Even old and out-of-date books can be useful if you are looking for information about the spirit of the age or a particular era’s concerns and attitudes.

Now that you’re ready to go forth and find some sources, consider this hard-won rule from the research trenches:

## Keep Track of Your Searches

You have probably heard that irritating saying, “There’s never time to do it right the first time, but there’s always time to do it over.” In order to avoid quoting this to yourself because you have to repeat a search you didn’t record, keep careful track of the searches you perform, together with the results. Setting up a tracking log in a spreadsheet or even a word processing document will make organizing things very easy.

Items to include in your log are these:

- project name (your subject or working title)
- date (when you searched a database)



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- database name
- search phrase (the words you searched on, including any Boolean operators)
- results (what was the result and what did you do?)
- notes (names of articles saved, plans for another search, etc.)

## Looking Online

The computer has certainly made researching easier with the availability of many online databases containing articles from peer-reviewed or refereed journals, not to mention the enormous amount of information available on the general World Wide Web. However, an important caution about searching online must be raised. When you click on a link in the search results and a Web site or document appears on your screen, you must take a moment to evaluate what you're looking at. An article filled with half-truths, misunderstandings, and exaggerations can look the same as—or even better than—an article from a well-respected encyclopedia or scholarly journal. A sophisticated-looking Web site can create the *simulation of authority* when in fact it has little or none. That old proverb about not judging a book by its cover has new use in its updated form:

**Don't judge an information source by its design.**

## Phrase the Search Terms Effectively

Whenever you use an electronic database—library card catalog, professional database such as ProQuest, or a search tool for the Web itself—how you phrase your search will have a dramatic effect on the results you get. Follow the advice here to create the best possible search strings:

- **Know how the search tool works.** Most search tools have a Help page that describes how to perform a simple search and an advanced search. For example, if you enter the two-word phrase *unemployment insurance*, does the search tool parse this as *unemployment OR insurance*, *unemployment AND insurance* or the exact phrase “*unemployment insurance*”? For online databases, is the search tool applying your search terms to the title, the author, the abstract, or the full text of the article? Is it selectable? Taking some time to read the search tool's Help page is always worthwhile.
- **Find out which Boolean operators the tool uses.** For advanced searches, you will want to create search strings of somewhat more sophistication



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than a single word or phrase. Search phrases are constructed by combining search terms with Boolean operators. Table 2.3 shows the most common of these operators and the effect they have on a search result. Note that some search tools use other operators. Google, for example, parses the plus sign (+) before a word to mean that the word must be included somewhere on the page in order for the result to be generated. Thus, the search expression *+Aztec calendar* would tell Google to return pages that must contain the word *Aztec* with a preference for pages with the word *calendar* also.

TABLE 2.3 BOOLEAN OPERATORS

Operator	Example	Returns results with
AND	depression AND dopamine	both terms, none with only one of the terms
OR	Splenda OR sucralose	either term or both terms
NOT	Washington NOT George	Washington except those with George
NEAR	flu NEAR vaccine	the terms within a set number of words of each other
ADJ	word ADJ root	the terms adjacent (next to each other) in either order

Boolean Tip: As Table 2.3 shows, the AND operator *restricts or narrows* the search, while the OR operator *expands or widens* the search. Be careful not to get these backwards.

- **Remember to include the word variants.** The exact word form or phrase might not appear in an article that otherwise could be useful, although a form of the word or phrase might. If, for example, you are looking for information about gold-plated objects, you should be sure to search for *gold plate*, *gold plating*, and *gold plated*. Many search tools make this easier by allowing wildcard searches, where a wildcard symbol stands in for one or more other letters. Two commonly used wildcards are the asterisk (\*) and question mark (?). With a wildcard, a search for *gold plat\** will return pages with the phrases *gold plated*, *gold plating*, and *gold plate* on them.

Other forms of word variants include fused words (*gold plate*, *goldplate*; *Web site*, *Website*; *e-mail*, *email*; *break room*, *breakroom*) and alternative spellings, especially British and American (*humor*, *humour*; *aluminum*, *aluminium*; *polyethylene*, *polythene*; *theater*, *theatre*; *medieval*, *mediaeval*). To continue with the gold plate example, a search might be phrased as *gold plat\* OR goldplat\** to cover the bases.

- **Don't forget synonyms.** A synonym is a word with a meaning similar to (not



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necessarily exactly the same as) another word. For example, illegal and unlawful are synonyms. If you are writing a paper with the working title “The Illegal Use of Consumer Lasers,” you might search on both *illegal laser use* and *unlawful laser use*, because either term might be chosen by an author. A synonym dictionary is a good place to start if you want to find alternate search terms. Once you locate a source or two, you’ll find more synonyms there that will help you expand your search. Formal synonyms (*insane, mentally ill*) should usually be preferred over informal ones (*crazy*).

- **Try related terms.** Related terms are words connected to a subject but not synonymous with each other. For example, the Centers for Medicare and Medicaid Services ([www.cms.gov](http://www.cms.gov)), the government agency that oversees Medicare, is often referred to simply as CMS. If, therefore, you are writing about Medicare, you might want to search on the related term CMS.
- **Explore the Ladder of Generalization.** Words exist along a continuum of specific to general. The more specific, the smaller the group of things covered by the word. For example, the search term *Chihuahua* will return far fewer hits than the term *animal*, because *Chihuahua* is a much more specific word. If you are getting too many hits with your search terms, move down the ladder of generalization and use more specific terms. Or, if you are getting too few hits, move up the ladder to more general terms.

## Go Beyond the Internet

Even though you may be tempted to get all your research information from a Web search, you should expand your efforts. While the Web does contain billions of pages of information, much of it valuable, it still represents a limited source. You will get a much better and more professional picture of your subject by including non-Web sources, especially books and scholarly articles, in your research. You will also develop much better researching skills.

You can perform some beyond-the-Web searching from your computer. Ask a reference librarian which electronic databases are available to you. These databases, such as ProQuest, InfoTrac, EBSCO Host, and JSTOR feature full-text articles from printed journals. Many public libraries also have some of these databases available to patrons, often accessible from home.

The full text of thousands of books is also available online from various sources (perform a Web search on the phrase “full text books” to find some of these sites). Even though these are older books that are out of copyright, they include such classics as *The Federalist Papers*, Adam Smith’s *The Wealth of Nations*,



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Charles Dickens' *Great Expectations*, Auguste Comte's *A General View of Positivism*, and many others still useful and pertinent to various research projects.

## 2.4 Using and Abusing Internet Sources

The Internet is an amazing grab bag of information, ranging in quality and credibility from excellent to terrible. When you sit down to search the Web, the first thing to remember is that not all information is created equal. Your goal is not merely to find some pages that include your search terms, but to find accurate and reliable information from reputable sources. Cut-and-run searching, where a student grabs whatever comes up on the first page of results, usually produces poor-quality papers. It also teaches students little about the research process.

### Search for Reliable Sites

As you will see below in Section 2.5, one of the indicators of the quality of information is its source. We tend to believe those who have knowledge and experience in a subject over those who are expressing the opinion of the day. It is reasonable, then, that organizations specializing in a subject are likely to have better information than a Web page posted by an individual. To begin your topic search, rather than typing in a search phrase and seeing what pages come up, start by looking for sites (that is, organizations) related to your topic. A profitable way to do this is to use your favorite search tool, such as Google or Ask or Yahoo, to type in your topic followed by one of these words: *institute*, *association*, *forum*, *foundation*, *institution*. For example, if you will be writing about peace and conflict in the Middle East, typing in *middle east institute* will return a number of organizations dealing with the Middle East. Try your search topic with each of the other words to locate more organizations.

Another way to locate information from organizations is to use the advanced search commands in the search tool to limit the search results to items in the .org and .gov domains. (The .org domain is for organizations, mostly nonprofit; the .gov domain is for government agencies.)

### Look Deeply Into the Results

It is true that the major search engines are constantly tweaking their secret methods of ranking pages so that the best pages appear earliest in the results. However, unlike directories, search engines use computer-based formulas to do the ranking, so many times the pages that you want will be well after the first 10 or 20



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displayed by the search tool. Good advice is to (1) craft your search phrase carefully, (2) use more than one phrase, and (3) take the time to look at the first 100 to 200 hits for each query. (Looking at 200 hits might seem like a lot, but it doesn't take as long as you might think.) You can set some of the search engines to return 50 or 100 hits on each page, making scrolling through a large number much more efficient.

## **Understand the Context of Individual Pages**

When you perform a general Web search, do not just grab a page that looks good and use it in your paper. Take some time to discover the context of the page. Try backing up your browser one directory at a time by cutting off each previous directory to see what larger site the page is part of. (Note: If you have the Google toolbar installed in your browser, you can click on the *Web Up* button to go back one folder with each click.)

It may be useful to look at the root Web site of the information, also. On the home page of the root site, you will often find an *About* link that will give you some information about the site and its purpose. This may be helpful as you judge the site's quality.

Remember, too, that blog postings range in quality from the word of experts to groundless rantings to intentional falsehoods designed for good or ill (stock price manipulation, for example) to plagiarized pieces of the writings of others. Be very careful to assess the quality of such sources before you make use of them.

## **Follow the Links**

Use quality information to find other quality information. When you locate a site or article that you find valuable and credible, visit the links from there to the other information. Not all links are recommendations, of course, but another page deemed worth linking to by a site you find valuable can provide a good possibility for finding more useful and reliable information related to your topic.

## **Use the Invisible Web**

A substantial amount of information posted on the Web is not indexed by the search engines. To get to this information, on the invisible or deep Web, you must go directly to the various sites that host the information. The extra effort needed to access this information is rewarded by the fact that this information is usually high in quality.



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To get access to this restricted information, perform a typical Web browser search on the following terms:

- “invisible web”
- “deep web”
- “invisible web databases”
- “how to search the invisible web”
- “hidden web”
- “locate invisible web databases”
- “deep web research databases”

Why is most of the Internet hidden behind security? Many sites want users to join (often free) before accessing their content. The reasons vary:

- The site might have a “no robots” command on its pages, preventing search engines from indexing them.
- The site might be hidden behind a password setup, so you will need to join first. The good news is that many of these sites are free.
- The site maintains a huge database and its owners do not want to show their information to just anyone.

## 2.5 EVALUATING SOURCES

Implied above is the idea that sources should be examined for quality before using them. As more and more information becomes available, the range in quality—from treasure to trash—seems to be growing wider. It is increasingly important, then, to apply some effective criteria to the evaluation of each potential source you encounter. Here is one set, known as the EAR test, for Expertise, Accuracy, and Reliability.

### Expertise

The first check of a source should relate to the author’s credentials. Is the author an authority in the area, an expert, through education, experience, or both? If not, is the author at least well informed about the area and aware of all the relevant issues? If there is a corporate author, is the organization widely respected or an authority? Does the way the author handles the subject indicate a knowledgeable, reasonable, and careful thinker? Often, an institutional affiliation



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will indicate an expert source. For example, a page on the Web site of a chemical manufacturer describing how to mix ingredients to make shampoo should be highly authoritative.

## **The expertise test: Is there evidence that the source knows the subject?**

### **Accuracy**

The next check of a source should relate to accuracy, which includes two parts. First is the currency of the information. Is the information up-to-date? In some areas (technology, business), information becomes outdated rapidly. In other areas (some historical work and literary scholarship), the information remains accurate for long periods. Outdated information can be worse than no information because it can be misleading. Check the date of the source and the date of the information in the source to be sure the information is recent enough for your needs. For example, there was once a concern that LCD televisions could not respond to fast motion quickly enough, resulting in smearing. Reviews of LCD TVs reflected this. Today, after many new generations of LCD TVs, that concern has long been resolved as much faster refresh rates have eliminated smearing. However, some of the older reviews are still online, presenting outdated information.

The second part of accuracy relates to correctness: Are the facts right, are the essential details present, is the presentation unbiased, is the whole picture presented? Be careful of sources that describe everything in sweeping generalizations and that lack details.

## **The accuracy test: Is the information correct today?**

A note on biased sources: There are many areas of controversy, not just in politics, religion, and philosophy, but in science and social science as well, where at least some of your sources will be somewhat or even highly biased. You can use biased sources, as long as you are aware of the bias and seek out opposing viewpoints (which may be biased as well). However, sources that argue for a controversial position while ignoring conflicting evidence or arguments should be used cautiously because failure to acknowledge and respond to opposing viewpoints can imply a less than honest argument.

### **Reliability**

The reliability test begins with a look at the source's documentation (bibliography)



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to see whether the information is well supported. Some sources will have little documentation because the material is a reasoned argument or a report on an original study or empirical investigation. Usually, though, there will be at least some indication of what other books and articles the authors made use of or recommend for further reading.

## Critical Tip

**Don't automatically believe something just because**

- **you heard it often**
- **it's been around a long time**
- **it's new**
- **one study says it's true**

Another part of the reliability test concerns how well the information in the source correlates with that in other sources. Corroboration—one source supporting or agreeing with another—is one way to test the credibility of or data-based conclusions, a source that agrees with other sources is more likely to be correct than a source that does not agree. A good practice, then, is to triangulate your sources: Find three sources that agree on important information. This test is not infallible, for the three sources could be all wrong and the fourth, conflicting source could be correct. Nevertheless, the test is generally a good guideline.

## **The reliability test: Is the information supported by other sources?**

Evaluating your sources can be challenging. However, as I mentioned in the first chapter (Section 1.2), working with sources improves your ability to “analyze what you are reading.” In other words, the more research and writing you do, the better you will become at evaluating the source material you find. You'll develop what some have called a Baloney Detector, an almost intuitive sense that will allow you to sniff out the less reliable sources from the more reliable. So don't confine yourself to the evaluation process outlined here. Devise your own system.

## REVIEW QUESTIONS

To see how well you understand this chapter, attempt to answer each of the following questions without referring to the text. (Write down your answers to make checking easier.) Then check your answers with the text. If you missed something important, add it to your answer.



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1. What is the Ladder of Generalization? Give some examples to clarify.
2. In addition to facts, what other kinds of information will be useful to include in a research paper?
3. Distinguish between primary and secondary sources. Give examples.
4. How does quoting a standard dictionary definition weaken a paper?
5. What are some techniques for locating high-quality information on the Internet?
6. Explain the importance of evaluating sources.

## QUESTIONS FOR THOUGHT AND DISCUSSION

Use these questions for in-class or small-group discussion or for stimulating your own thinking.

1. When you write a paper, how do you organize your materials (note cards, data files, folders, etc.)? How effective do you find this method and why?
2. Have you ever needed to look up a source a second time in order to write down all or part of its bibliographic information? Was it frustrating?
3. How careful are you to think about the wide range of quality and reliability of the information you retrieve from electronic sources? Do you evaluate your sources?
4. When you research, are you more likely to use the first sources you locate, or do you make an attempt to select carefully from a larger set of possibilities? Why?
5. Have you ever written a research paper knowing your position before you began? If so, would you say you were biased? Did any of your research change your opinion?
6. When you finish a paper, what steps do you take to ensure the accuracy of your grammar, spelling, and punctuation?
7. If your school or college has a writing center, have you visited it? What kinds of help did you receive? Did the advice you received improve your paper?

## MINI-RESEARCH PROJECTS: SOURCE EVALUATION MODELS

You might call these projects “Use the Web to Test the Web,” although they go beyond that. This chapter provided you with a brief rubric for evaluating the sources you locate. For this project, you’ll find some other source evaluation strategies.



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1. Perform a Google or Bing search on “source evaluation” and examine at least half a dozen models. Choose one to evaluate. What are its strengths and what areas could be improved?
2. Choose three examples from your search above and create your own source evaluation strategy by blending the best ideas from each of the three examples. Be sure to include a reference, crediting the three sources. Now test your new strategy on one of your sources.
3. Perform a Google or Bing search on “source evaluation worksheet” and examine the top ten or so briefly. Choose three for closer examination. Then, choose two to fill out, using one of your sources as the test case. Write a brief (50–100 words) review of the worksheet, describing its usefulness.
4. From the ten or so worksheets you looked at, create your own evaluation worksheet. Test it on one of your sources.

## A LITTLE RHETORIC: ANAPHORA

Anaphora (pronounced uh NAF or uh) is a simple but effective device used for emphasis. The device involves repeating the same word or words at the beginning of several sentences or phrases. The repeated words draw attention to themselves, and that makes for a memorable thought.

### Example 2.LR.1

- I. The effort to switch the public from energy-wasting incandescent light bulbs to the highly efficient LED bulbs has so far not used the best strategy: incentivize the manufacturers with tax credits, incentivize businesses with tax deductions, and incentivize consumers by subsidizing bulb costs.
- II. Throughout the second chapter, Doe (2014) continues to propose that fees on all forms of identification be eliminated. He wants free driver’s licenses, free passports, and free senior ID cards.
- III. According to Doe (2015) the so-called “train to nowhere” is a poor idea because, as he claims, no one lives there, no one wants to ride it, and even if they did, no one could afford the ticket.
- IV. Countering Doe, however, Abruster (2016) asserts that the project is worthwhile because, as he says, we desperately need employment opportunities in the area, we desperately need economic development in the region, and we desperately need an optimistic vision for the state.



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Anaphora can be used with effect to hammer away demanding questions that begin with the same *who*, *why*, *how*, *when*, *what*, or *where*.

## Example 2.LR.2

- I. Zithrop (2015) demands to know why such a glaring error slipped by, why it has only now been remedied, and why the remedy costs so much.
- II. We now know what happened, but some questions remain: Who ordered the transfer of funds? Who carried out the transaction itself? And who failed to notice the unusual activity?
- III. But what comes next? What should we expect? Or what should we take as our own responsibility?

## NOW YOU TRY

1. Create an example of anaphora using a key word to emphasize an idea of your own.
2. Create an anaphora that reflects the ideas of a source.
3. Create two examples of anaphora that use your choice of *who*, *why*, *how*, *when*, *what*, or *where*.