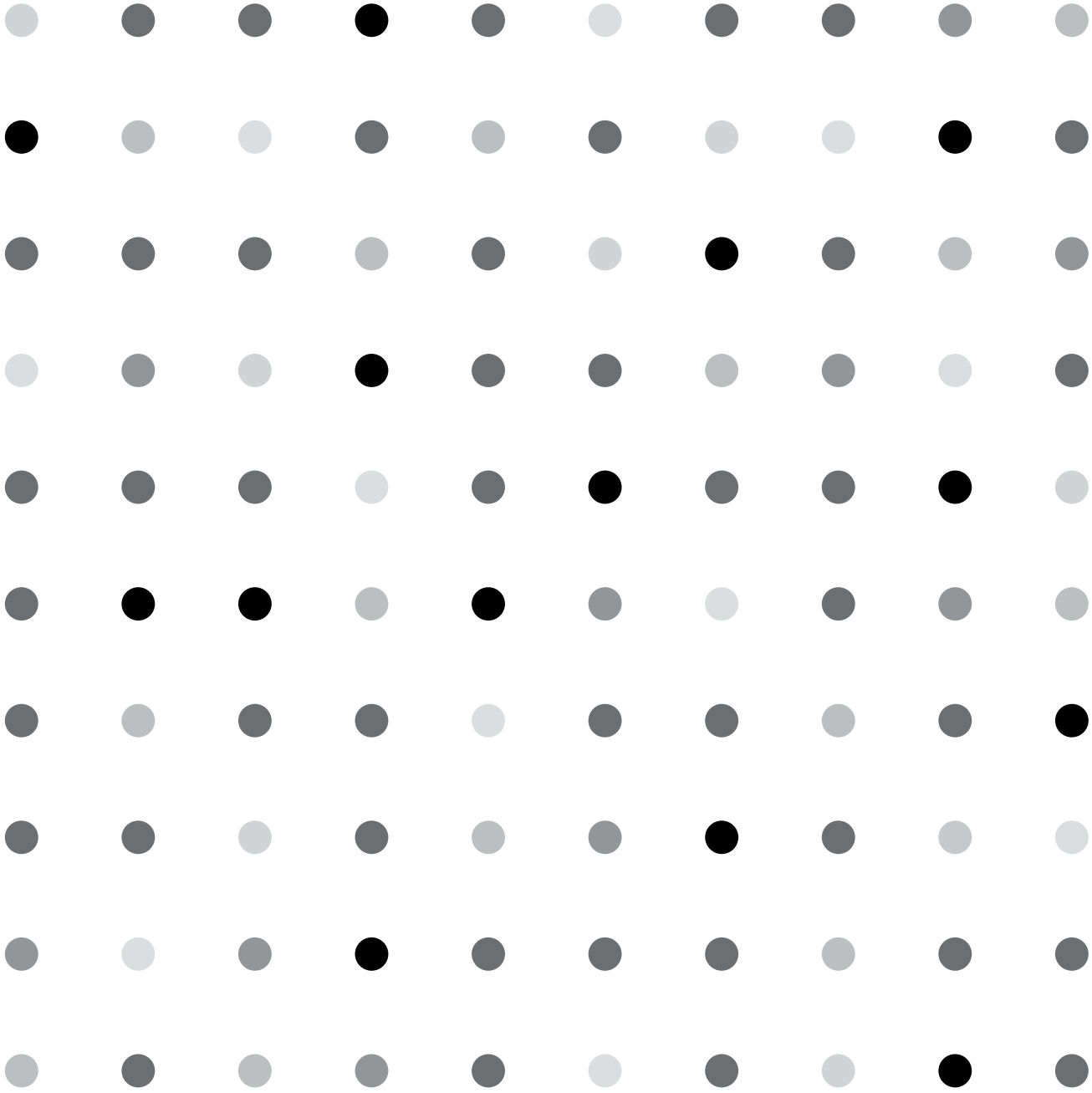

Part 2

Student Handouts

Activity 1

Distinguishing Between Primary and Secondary Sources

STUDENT HANDOUT (1)

'Primary sources' are first-hand narratives, original documents/objects or factual accounts that were written or made during or close to the event or period of time. They have a direct connection to a person, time, event or place. Primary sources have not been subject to processing, manipulation, analysis or interpretation. The following are examples of primary sources:

- historical records, texts and original manuscripts;
- government records (if they have not been processed, interpreted or analysed);
- company/organization records (if they have not been processed, interpreted or analysed);
- personal documents (diaries, journals and memoirs, for example);
- recorded or transcribed speeches or interviews;
- raw statistical data (if they have not been processed, interpreted or analysed);
- works of literature;
- works of art;
- theatrical works;
- film/video;
- published results of laboratory experiments;
- published results of clinical trials;
- published results of research studies;
- conference and seminar proceedings that report up-to-date, original and ongoing research;
- patents;
- technical reports.

'Secondary sources' interpret, analyse and critique primary sources. They can provide a second-hand version of events or an interpretation of first-hand accounts. They can tell a story one or more steps removed from the original person, time, place or event. The following are examples of secondary sources:

- scientific debates;
- analyses of clinical trials;
- analyses/interpretations/critiques of previous research;
- datasets and databases that have been processed, analysed or interpreted;
- texts and books that use a variety of primary sources as evidence to back up arguments and/or conclusions;
- book and article reviews;
- biographies;
- critiques of literary works;
- critiques of art;
- television documentaries or science programmes;
- analyses of historical events.

STUDENT HANDOUT (2)

Consider the following sources and decide whether they are a primary source, a secondary source or a combination of both. Refer to the attached handout, if required.

Source 1

A newspaper article that describes an air disaster that has taken place the previous evening.

Primary ○
Secondary ○
Combination ○

Source 2

A present-day documentary that describes the experiences of female factory workers during the Second World War.

Primary ○
Secondary ○
Combination ○

Source 3

A conference paper that describes the interim findings of an ongoing study into antisocial behaviour in schools.

Primary ○
Secondary ○
Combination ○

Source 4

A manuscript of Lewis Carroll's *Alice's Adventures Under Ground* (the original version of *Alice's Adventures in Wonderland*).

Primary ○
Secondary ○
Combination ○

Source 5

Audio recordings (oral history interviews) that have been undertaken with people working as divers in the North Sea, off the east coast of the UK.

Primary ○
Secondary ○
Combination ○

Source 6

A journal article describing how datasets can be used to help inform social policy.

Primary ○
Secondary ○
Combination ○

Source 7

The diary of a woman who was in domestic service between 1938 and 1942.

- Primary ○
- Secondary ○
- Combination ○

Source 8

The *Communist Manifesto* (originally the *Manifesto of the Communist Party*) published in 1848 by German philosophers Karl Marx and Friedrich Engels.

- Primary ○
- Secondary ○
- Combination ○

Source 9

A journal paper that reviews existing research into alcohol and cancer of the liver before it reports the findings of a new study, carried out by the author of the paper.

- Primary ○
- Secondary ○
- Combination ○

Source 10

An online legal encyclopaedia containing brief, broad summaries of legal topics.

- Primary ○
- Secondary ○
- Combination ○

Source 11

A research methods textbook.

- Primary ○
- Secondary ○
- Combination ○

Source 12

A gold torque (or torc, to be worn around the neck) thought to date from the seventh century BC, found in a field in Somerset, England.

- Primary ○
- Secondary ○
- Combination ○

Source 13

An article that reviews current research into the development of drugs for treating Alzheimer's disease.

- Primary ○
- Secondary ○
- Combination ○

Source 14

Field notes from an ethnographic study of a community in Papua New Guinea.

- Primary ○
- Secondary ○
- Combination ○

Source 15

Raw data from a clinical trial (or clinical study) into a new type of vaccine.

- Primary ○
- Secondary ○
- Combination ○

Activity → 2

Finding and Using Primary Sources

STUDENT HANDOUT

Primary sources are first-hand narratives, original documents/objects or factual (not interpretative) accounts that were written or made during or close to the event or period of time. Primary sources that you can use for your research include:

- historical records/texts;
- government records (if they have not been processed, interpreted or analysed);
- company/organization records (if they have not been processed, interpreted or analysed);
- personal documents (diaries, notes or memoires, for example);
- recorded or transcribed speeches or interviews;
- raw statistical data (if they have not been processed, interpreted or analysed);
- works of literature;
- works of art;
- theatrical works;
- film/video;
- published results of laboratory experiments;
- published results of clinical trials;
- published results of research studies;
- conference and seminar proceedings that report up-to-date, original and ongoing research;
- patents;
- technical reports.

Choose three of the primary source categories listed above. For each category you have chosen, identify and find one specific primary source that is relevant to your subject and/or research. This could be a subject-relevant research report, raw statistics pertaining to your subject/area of research, a conference paper on a relevant, ongoing piece of research, or an original manuscript, for example.

Once you have identified and found three specific sources, answer the following questions for each of the three sources:

1 Where did you access this source? Give specific information/locations (library addresses, websites, company/organization, archive, etc.).
2 Did you encounter any difficulties accessing this source? If yes, what action did you take to overcome these difficulties?
3 When critiquing, reviewing and/or evaluating this primary source, what type of information do you need to gather? Work through each source and be as detailed as possible.
4 What information do you need to collect so that you can reference the source in your writing/research report? Refer to the referencing system used at your institution to help you collect this information.
5 How do you intend to store and record the information that you have gathered from this source? How are you going to ensure that you can find this source again, if you need to?

Activity 4

Assessing Prior Experience and Learning

STUDENT HANDOUT

Consult the list that we have just developed from our brainstorm and answer the following questions, on an individual basis. We will then discuss your answers in a group discussion.

1 Identify the skills and knowledge that you will need for your proposed research project, using the brainstorm list as a guide.
2 Do you think that you already have any of the skills and/or knowledge that you have identified? If so, think about when and how they were developed. Include both formal and informal learning situations, and relevant experiences from everyday life.
3 Do you need to develop any of the skills and/or knowledge that you have identified in relation to your proposed research? If yes, how will you develop them? Provide specific examples, where possible. This could include research methods modules, training sessions or reading specific publications, for example.

Activity 5

Reflecting on Your Inquiry Skills

STUDENT HANDOUT

Start to write a learning journal. It should include notes, observations, thoughts and other relevant materials in relation to inquiry skills. It should not be a descriptive account of your course, but should indicate an active process of thought, reflection, recognition, analysis and understanding. Your journal can be paper or digital, according to your preference. Keep the journal for the duration of the course. It is a personal endeavour that will help to enhance your learning and personal development, and it will be a useful point of reference for assignments and revision.

A useful way to begin your learning journal is by reflecting on your inquiry skills. Start this process of reflection at the beginning of your course and continue with your learning journal entries as your course progresses. This will help you to understand more about how your previous experiences and learning are relevant to your course.

There are two ways that you can approach the task of reflecting on your inquiry skills. The first is to think about significant personal experiences and work out whether they have any relevance to inquiry skills. These experiences could have been gained from employment, previous study, as a volunteer, as a member of a sports team, from hobbies, from parenting or during social activities, for example.

The second way to approach this task is to think about the inquiry skills that you need to develop on your course and then work out whether you already have experience that has helped you to develop this type of skill. Examples of such skills can include written and oral communication skills, listening skills, questioning skills, observation skills and numerical skills.

When you reflect on an experience ask:

- What happened?
- How and why?
- How did I feel at the time?
- What about now?
- What went well/badly?

Try to identify where significant learning occurred and ask:

- What could I have done differently?
- What can I learn from the experience?

Think about how you would give evidence for that learning and ask:

- How can I demonstrate my learning?
- How can I provide evidence?

Enter your reflections into your learning journal and then continue to write in your journal as your course progresses. Remember to include any relevant experiences (from your course, from fieldwork, after discussions with other students or tutors, from independent study or from social experiences, for example). As you do so, pay attention to the following:

- Are there parts of your coursework that you don't understand? What action can you take to rectify this?
- Have you had any flashes of inspiration? Why and how did they occur?

- What resources have been of particular use to you? How and why?
- Have you noticed that your opinions and values have changed? If so, in what way?
- Can you identify ways in which you can improve your reflection, learning and thinking in the future? What action can you take to make these improvements?
- Has writing in your learning journal aided understanding and helped with personal development? If so, in what way?
- What further action can you take to help with your personal development?

Activity 5

Activity 6

Using the Internet for Background Research

STUDENT HANDOUT

Consider each of the online tools listed below and choose three that you would like to explore further. Search the internet using your three chosen tools to find three sources (one from each of your chosen tools) that are relevant to your research topic and/or methodology. Analyse each of the three sources and provide a short written review and critique.

Note down all the information that you require to reference the sources correctly (following your institutional guidelines for referencing). This information will be required if you decide to access the source at a later date, as your research progresses, or if you decide to use the source as a reference when you come to write up your research.

- **Online journal databases**. These enable you to search journal abstracts and full-length articles using keywords that match your research topic and methodology. You can search for related works, citations, authors and publications. If the article is not freely available you will be directed to a library or website where the article can be found. Search for databases specific to your subject/methodology, or try Google Scholar (http://scholar.google.com).
- **Online repositories**. Academic papers, peer-reviewed articles, monographs and book chapters are freely available from online repositories. Details of these repositories can be obtained from The Registry of Open Access Repositories (ROAR), which is hosted by the University of Southampton (http://roar.eprints.org). You can also access scientific and scholarly journals from the Directory of Open Access Journals (www.doaj.org) and social science abstracts and papers from the Social Science Research Network (www.ssrn.com).
- **Datasets**. These provide data, usually in tabular form, that have been published by a single source and are made available for others to access and manipulate. For example, the Economic and Social Research Council has published details of over 900 datasets generated by ESRC-funded grants (www.esrc.ac.uk). The data are free to access and use. These datasets can provide useful information, even if your work is qualitative in nature.
- **Academic blogs**. Today there are many leading academics who actively blog and provide trustworthy sources of current opinion and information for students and researchers. These can be a useful source of information as you begin your research project, especially when they provide links to current thinking in your field. Search for academic blogs related to your research topic.
- **Podcasts**. Many leading academics produce digital media files (audio or video) that can be downloaded by the target audience. Many are presented as a series and are made available as specific episodes over a period of time. Podcasts can be useful to you if they cover your topic of research and/or methodology and, again, can alert you to current thinking in your field. Search for academic podcasts related to your research topic.
- **Newspaper databases**. These are a useful source of up-to-date and/or historical information about events and issues. For example, you can access the British Newspaper Archive at the British Library. This contains over 10 million searchable pages, from more than 200 newspaper titles from the UK and Ireland (it is a priced service online, but it is free to search). The British Newspaper Archive is made up of newspapers that pre-date 1900, but other newspaper databases contain up-to-date newspapers.
- **Image databases**. Digital images available online include images of art, history and culture from global museums, galleries, contemporary artists and private collections. They can also include scientific and medical images, photographs and illustrations. Some students may not perceive digital images to be of importance to their research, but accessing this type of database can help your creativity and lead to new insights. Search for image databases by keyword related to your research topic and/or subject area. Be aware of issues of copyright if you intend to use any images in your work.

Activity 8

Recognizing Statistics, Facts, Arguments and Opinions

STUDENT HANDOUT

Read the definitions below and become familiar with the difference between statistics, facts, arguments and opinions. Over the next week keep a log in which you can record any of these when you see or hear them. For example, you could hear some statistics reported on the radio or see graphs or tables presented on television. Or you could notice an opinion given on social media, an argument made in a book or facts presented in an online journal.

When you record any statistics, facts, arguments and opinions that you have seen or heard, note down the time, date, where the information was published and what was said (or written). When you do this, consider the following questions:

1 Is it a statistic, fact, argument or opinion? How can you tell that this is the case?
2 Is the information that is presented disguised as something it is not? For example, is something being presented as fact when there is no evidence to back up this fact (perhaps an opinion disguised as a fact)?
3 Are you, personally, convinced by what has been said or written?
   (a) If you are convinced, what has convinced you?
   (b) If you are not convinced, what could the reporter/author have done differently to convince you?

Can you identify any problems/difficulties with what has been said or written? If you can, how would you correct the information?

Statistics

'Statistics' is a numerical discipline that involves collecting, organizing, analysing, interpreting and presenting data. The data that are presented are also referred to as 'statistics'. Statistics are only as good as the methods used to create them and the skill of the statistician/researcher who collects the data. Figures can be misleading, incorrect (whether deliberate or by mistake) and open to misinterpretation. It is important to analyse carefully all statistics presented in the media and in academic publications, and use statistics correctly in your own work.

Facts

'Facts' are things that can be investigated or observed and are found to be true (they can be proved or confirmed). They tend to be exact and specific. However, not everything presented as a 'fact' is correct and true: a careful analysis needs to take place to ensure that information presented as fact is valid and reliable. This is the case when you critique the work of others and if and when you use facts in your own work.

Arguments

'Arguments' are reasons or explanations given to support or reject a view. Arguments are used to prove something through using reason and supporting evidence, which can be facts, statistics and the arguments of experts in the field

(these must be acknowledged so that plagiarism is avoided). Researchers, reporters and students must demonstrate that the arguments they are using can be backed up by evidence. Weak arguments are those that are not backed up adequately or those that focus only on supporting evidence.

Opinions

'Opinions' are personal thoughts, beliefs or judgements that are not based on proof or certainty. They are used in a wide variety of everyday situations (we all have our own personal opinions on particular issues). However, problems arise when opinions are disguised as facts or arguments, especially when they are expressed with confidence. You must be wary of opinions disguised as arguments in the work of others and must ensure that you do not mistake opinions for arguments in your own work.

Activity 9

Discovering Questionable Statistics Published Online

STUDENT HANDOUT

Search the internet for a website, webpage, blog or other online publication that uses unreliable statistics to back up a questionable line of thought and/or ideology. At first this can be done on an individual basis so that you can explore a wider variety of online publications.

Once you have found some suitable sites/publications, choose one that you would like to work with as a group. Review and critique your chosen site/publication, using the following questions as a guide:

1 What makes you think the statistics are unreliable?
2 Why do you think the line of thought and/or ideology presented is questionable?
3 How have statistics been used to back up this questionable line of thought/ideology?
4 What flaws can you identify in the statistics or the way they have been presented?

Once you have done this, draw up a checklist that can be used to help you and your peers recognize and evaluate unreliable statistics presented online, based on what you have identified in this activity.

You will need to present your findings in a 10-minute presentation to your fellow students. You should discuss the example you have found, illustrate why you think the statistics are questionable and present your checklist. You can present your findings in any way you wish, using any software, materials or props that you deem appropriate. Try to make you presentation interesting and entertaining: you may find it useful to practise your presentation with your group members before we reconvene.

Tip

When undertaking this activity, be aware of making subjective judgements that are influenced by personal bias. This is an inclination or preference that influences your judgement, often in a subtle way that is difficult to detect. This is of particular importance when critiquing a line of thought or argument that goes against your own ideas. You can work together as a group to reduce personal bias.

Activity → 10

Managing Critiques and Reviews

STUDENT HANDOUT

Design a tool that will help you to record, store, organize and manage your critiques and reviews of academic papers and scientific material. This could be a spreadsheet, table, database or tool of your own design. If you decide to use an existing online tool, adapt it to your personal needs. The list below provides examples of the types of categories that you could include when you design your tool:

- author;
- date;
- publication;
- publication medium (website, journal, blog, for example);
- URL and date of access, if relevant;
- research topic/subject
- research question;*
- epistemology and theoretical perspective;*
- methodology;*
- sampling method;*
- sample size;
- data collection tools/methods;
- analysis;
- findings;
- strengths;
- limitations;
- your opinions and/or conclusions;
- relevance to your own research;
- whether to reread at a later date (a simple yes/no will suffice here).

Find two research papers, journal articles or scientific reports that relate to your course, your research or your proposed research methods or methodology. Review and critique the papers, filling in your personally designed tool, as appropriate. If you find that categories are missing, need changing or need deleting, make the relevant changes to your tool, where necessary.

Activity → 11

Critiquing Quantitative Research Papers

STUDENT HANDOUT (1)

Read the paper given to you. As you read, answer the following questions. Be prepared to discuss your critique in our next session.

1. Who is the author of the paper?
2. Why do you think the author has decided to publish this paper?
3. Is there a good, clear description of how the research was carried out? Can you understand how the research was carried out, from the description given?
4. Has the author included everything you need to know about how the research was carried out? Do you think any information is missing?
5. Can you understand the findings presented in the paper? Has the author(s) explained the results in a clear and succinct way?
6. Is there anything in the paper that you don't understand? If so, what do you think the author(s) should have done to make it clearer?
7. Are all conclusions backed up by evidence? Has the author jumped to conclusions about anything, or made assumptions that are not backed up by evidence?
8. Are all sources acknowledged and referenced properly?
9. Is the paper well written? Can you make any suggestions for improvement?
10. Is the paper useful to other researchers and/or the general public? Does it tell us something important? If so, what does it tell us?

STUDENT HANDOUT (2)

Read the paper given to you. As you read, answer the following questions. Be prepared to discuss your critique in our next session.

1 Who is the author of the paper and what are their credentials?
2 What is the reason for making the data/research results public?
3 Have the research topic and purpose of the research been well justified?
4 Has the researcher provided a detailed description of the quantitative methodology? Is it clear why this methodology was chosen and how it is the best way to answer the research question?
5 Are the methods well documented?
6 Do you think the correct procedures have been followed (this could include, for example, when forming hypotheses, generating samples, conducting experiments, analysing data and reaching conclusions)?*
7 Is it possible to ascertain whether the measurements are consistent (through repetition and retest by other scientists, for example)?*
8 Have all data been reported (including those that weaken or contradict the results presented)?
9 Is the source you are looking at the original source of the data (is the study reporting primary or secondary data)?
10 Have the data been interpreted correctly?
11 Do statistics apply to the point/argument that is being made? Have the figures been manipulated to fit the argument?
12 Are visual data presented in a way that enables researchers to draw their own conclusions and verify the assertions that have been made (if relevant)?
13 Have the conclusions been investigated, tested and verified by other scientists? If not, would it be possible for others to do so?*
14 Are the assumptions and conclusions valid and backed up by evidence?
15 Have generalizations been made that are not based on careful experimentation and analysis?
16 Has bias been introduced into any of the information presented?
17 Is there a comprehensive literature review, and have all other researchers/arguments been well referenced?
18 Have all sources been acknowledged?
19 Is the report well written and presented, following the established rules for scientific reports, with all diagrams, charts, figures and graphs well presented, complete and referenced in the text?
20 Has the importance/impact of the research been demonstrated?

Activity 12

Critiquing Qualitative Research Papers

STUDENT HANDOUT (1)

Read the paper given to you. As you read, answer the following questions. Be prepared to discuss your critique in our next session.

1. Who is the author of the paper?
2. Why do you think the author has decided to publish this paper?
3. Has the author included a relevant background literature review? Is this adequate?
4. Is there a good, clear description of how the research was carried out? Can you understand how the research was carried out, from the description given?
5. Can you understand the interpretations/findings presented in the paper? Has the author explained the results in a clear and succinct way?
6. Is there anything in the paper that you don't understand? If so, what do you think the author should have done to make it clearer?
7. Are all interpretations/conclusions backed up by evidence? Has the author jumped to conclusions about anything, or made assumptions that are not backed up by evidence?
8. Are all sources acknowledged and referenced properly?
9. Is the paper well written? Can you make any suggestions for improvement?
10. Is the paper useful to other researchers and/or the general public? Does it tell us something important? If so, what does it tell us?

STUDENT HANDOUT (2)

Read the paper given to you. As you read, answer the following questions. Be prepared to discuss your critique in our next session.

1 Who is the author of the paper and what are their credentials? What reason have they for making sure that their information is available?
2 Have the research topic and purpose of the research been well justified?
3 Has the researcher provided a detailed description of the qualitative methodology? Is it clear why this methodology was chosen and how it is the best way to answer the research question?
4 Has a conceptual or theoretical framework been described? Is it adequate and appropriate?*
5 Has a philosophical/epistemological discussion been included? Is it adequate and appropriate?*
6 Have the research methods been well-described? Is there a description of sampling procedures, the method(s) of data collection and the method(s) of data analysis? Are these methods and descriptions appropriate and adequate?
7 Have ethical considerations been taken into account and been well described? Are they adequate and appropriate? For example, has it been made clear that informed consent was obtained? Has the researcher described if and how participants might have chosen not to take part in the research?
8 Has the researcher highlighted and acknowledged any bias that might be present in the research process?
9 Are the results credible, dependable, authentic and trustworthy?*
10 Are the results rigorous and accurate? Can the researcher demonstrate that saturation or redundancy in data has been achieved (that is, no new results will emerge from the data analysis)?*
11 Has a comprehensive literature review been undertaken (if relevant)? Have all sources been acknowledged and are they well referenced?
12 Have the findings been presented well? Have they been placed in context? Have they been related to other work on this research topic?
13 Has the importance/impact of the research been demonstrated?

Activity 13

Evaluating Science in the Media

STUDENT HANDOUT

Monitor various forms of media over the next week. This can include television news programmes, online newspapers, social media, radio stations and direct mailings, for example. Your task is to take note of science reports when they appear in any media that you are monitoring. When you do this, consider the following questions:

1 Can you tell whether the media is reporting reputable or flawed science? Your brainstorm list will help you to think about these issues.
2 What clues can you identify that help you to decide whether the research is reputable or flawed? Are these similar to the list developed during the brainstorm, or can you identify other clues that were not listed?
3 How is the science reported? For example, is the tone positive or negative, supportive or critical? Does this have an influence on whether the research is seen to be reputable or flawed?
4 Can you identify flawed statements or assertions in the media report? Why are they flawed?
5 Is it actually possible to decide whether science is reputable or flawed by how it is reported in the media? What further information should be reported to help you decide? If this information has not been included in the report, why do you think this is the case?

Activity 14

Recognizing Media and Political Bias

STUDENT HANDOUT

'Bias' is a term that is used to describe a tendency towards or a preference for a particular line of thought, idea, perspective or result. Media bias occurs where a media outlet reports a story in a partial or prejudice manner. In terms of reporting research studies, this may take the form of omitting findings that don't support their headline, or misreporting research conclusions, for example. Media bias can also be present in cases where large, influential companies persuade certain media outlets to report their conclusions in a favourable way.

Political bias is where an individual, researcher, politician or media outlet is influenced by their political view, stance or personal belief. In terms of reporting research, again, this influences what is reported or used as evidence, and how this is reported or used as evidence. Political bias can be present in other ways and can, for example, have an influence on the types of research that are funded, the design and methods used, the conclusions and the dissemination of results.

Think about all the different ways that media and political bias can influence research. This could be during the design stage, during the data collection stage or during the reporting stage, for example. Discuss these issues with your group members and come up with a list of the different ways that political and media bias can influence research and the reporting of research.

You will need to share your list with the rest of the class during a class 'brainwave'. This is a variation on the brainstorm technique and will require a member from each group to stand up, in turn, and give an example of how political and/or media bias can influence research. This method enables you to share information, while listening to others, thinking quickly and memorizing what has come before. Each answer is given quickly, without judgement or criticism, even if you disagree with what has been said.

Activity → 15

Recognizing Research(er) Bias

STUDENT HANDOUT

Read the definition of 'bias' and 'researcher(er) bias' given below. Once you have done this, work together, in your group, to develop an idea for a research project. You can choose any topic, methodology and methods that you wish. Produce a short summary of your proposed research: you will need to present this summary to the rest of your class in the next teaching session.

However, within your summary you must purposely incorporate some form of research(er) bias. This can be incorporated into any stage of the research, for example in the choice of topic, choice and type of methods, sampling procedure, data collection methods, data analysis or reporting of results. You can choose to introduce only one type of bias, or you may prefer to introduce several types of bias within your summary. The choice is yours.

When you present your research summary to the rest of your class, the other students must try to detect what type of bias has been incorporated into your summary. They can ask questions at the end of your presentation to try to obtain more information if they have not detected the bias. The winning group is the one that has made the bias the hardest to detect. Therefore, you must try to ensure that your research(er) bias is obscure, hidden, subtle or undetectable.

Definition

'Bias' is a term that is used to describe a tendency or a preference for a particular line of thought, idea, perspective or result. 'Research(er) bias' (or experimenter bias) is used to describe a problem with how the research has been chosen, conducted, analysed and/or reported. The extent to which bias is seen to be introduced into the research process depends on methodology and theoretical perspective. For example, researchers who pay close attention to objectivity (perhaps in quantitative research) will follow set rules and procedures to get rid of bias in the research process (eliminate bias). On the other hand, researchers approaching from a more subjective standpoint (perhaps in qualitative research) will recognize, define and discuss the types of bias that could be introduced because they believe that is it impossible to eliminate bias completely (acknowledge bias).