Evaluating the literature

"My sources are unreliable, but their information is fascinating"

-Ashleigh Brilliant

Introduction

Unreliable sources of fascinating information can be great fun but, of course, high quality information is vital to sound research. No credible researcher uses the literature without evaluating it to ensure that it is:

1. High quality literature that can be used to help them build their knowledge base and inform their own research
2. Relevant to the various aspects of the research question.

Insightful researchers also **evaluate themselves** to ensure that their pre-existing knowledge or opinions do not bring a bias to their understanding or interpretation of the literature they read.

By the end of this module you should be able to do two things:

1. Apply the evaluation criteria to literature
2. Recognize how evaluating the literature for its quality and relevance will also help you identify important factors that should be discussed in your literature review. This part of your evaluation is related to your *critical reading of the literature* or the *critical thinking about your topic*.

Introducing our literature evaluation criteria

In this module we will use a list of evaluation criteria developed by Flateby and Fehr (2008), to which we have added two further criteria. Let's begin by introducing the broad criteria. Then we will explain them in more detail, and then you can evaluate some literature for yourself.

Flateby and Fehr (2008) recommend five overarching criteria for evaluating the literature:

1. Credentials and areas of expertise of the author/s should be appropriate
2. Development and presentation of ideas and arguments should clear and logical

3. Evidence presented should be of an appropriate quality
4. Evidence presented should be sufficient in quantity
5. Writing mechanics should be sound.

Our criteria list has two additions. The first is related to **YOU**:

- You need to be aware of any potential bias that you could bring to **your** reading of the literature

The second is about **YOUR** research:

- Is the literature truly relevant to **your** research or, do you like it so much that you are trying to find ways to use it?

Criteria #1: Potential bias/es that you could bring to your reading

Did you know that our brains look for information with which we already agree? And, that they want to reject information with which we have already decided we disagree?

It doesn't matter how much evidence we find to prove that our thinking is wrong, our brains try really hard to ignore or reject the new evidence. Our brains want to work with the information with which they already agree.

Psychologists call this "confirmation bias" and they have worked with the concept for decades (Casad 2007; Grotzer 2011; Nickerson 1998). More recently, cognitive neuroscience research has confirmed confirmation bias's existence by looking at how our brains respond to data that is consistent with our beliefs and how our brains respond to data that conflicts with our beliefs (Grotzer 2011).

As a researcher you must work with an open and inquiring mind - as a **critical thinker**. When working with students, I regularly see some students bringing either one of these three biases to their work with the literature:

1. Such a strong scepticism about the concept of sustainability and its value to professional practice and research that they reject all literature and evidence related to sustainability topics
2. Such a strong belief in the concept of sustainability that any literature in its favour (no matter what it is) is accepted

3. Ethnocentrism – a belief that our own society or culture is superior to the societies and cultures to which others belong. This leads some students to dismiss literature that is very useful to them (eg. social or cultural issues that impact on the take-up of a particular technology and so affect the usefulness of a solution that is proposed).

So, you should begin your literature evaluation by thinking seriously about what biases or assumptions you might bring to your research topic. It may very well turn out that you bring no biases to your research, but that doesn't mean you're safe.

Biases may develop during the research process. As we saw with the *Scientific Research & Literature Cycle* (Appendix A), research evolves over time, making interpretations and analyses a complex task for the researcher. This evolution may lead researchers to discover that earlier research findings are no longer applicable. Or, improved research methods might lead to findings that prove that earlier findings were actually incorrect.

As a researcher, you must keep an open and critical mind to conduct a historical examination of research findings. You must ensure that you analyse contradictions or changes in findings appropriately, and **apply them to your research appropriately**. Take *confirmation bias* (discussed above) as an example.

Before brain observation and measuring technologies were available, psychology researchers used various methods to propose and prove that human beings explore and learn with a confirmation bias. What if neuroscientists discovered that our brains didn't respond differently when we agreed or disagreed with the new information that we received (that confirmation bias does not exist), and researchers in cognitive psychology stuck with their beliefs about confirmation bias? Where would that leave the research? Instead of the two branches of science working together to create new and improved understandings of human thinking and behaviour, they would be ignoring each other or battling to prove that the other is wrong; possibly achieving no advances in understanding, and definitely wasting a lot of research resources that could be used productively.

If you are thinking critically as you read and write your literature review, **the actual process of undertaking the literature review** will help ensure that you recognise your biases as they are developing; allowing you to address them before they impact on the practical side of your research project, and eventually negatively influence your research findings. BUT, you need to be fresh and focused – remember, confirmation bias is a hard thing to recognise and your brain prefers that you don't try to overcome it.

Criteria #2: Genuine relevance to your research

You also need to be sure that the literature is relevant to your research. You are looking for the right information for the job - the literature that can help you achieve the knowledge building and research action goals of your literature review and your project. In your studies so far, you may have tried to fit whatever information you could find to an assignment task, and found that it served your purposes (ie. you passed your assignment). But, trying to fit whatever literature you can find to your research question won't actually help you develop the knowledge that you need, nor will it help you accomplish your research tasks.

Most fourth year project students don't have a genuinely original research project. Instead it is most likely that you will have an **element** of originality in your research – a much more manageable task for the "researcher on L Plates". But, if you are one of the few who does take on a genuinely original research topic, you may find it very difficult to find literature directly relevant to your project. Instead you will have to apply indirectly related research in innovative yet appropriate ways. In the module that introduced the literature and the literature review, we provided an example of one of these dissertations.

Literature that is not on your particular research topic can be directly related to your research. For example:

- **(An engineering example)** You may have a fibre composite topic where you test particular properties of a plant fibre (not previously researched) for its potential value in composite applications. Your reading of the literature may reveal some research methodologies that have been commonly and successfully used to test **other** plant fibres for their suitability to composite applications. That literature may very well be directly relevant to your work as no-one has yet tested your fibre
- **(A construction management example)** Look back at the *Scientific Research & Literature Cycle* for construction management **(Standard version / Mobile version).** There we examined the way that construction managers have successfully applied a more general management theory, *critical success factors*, to the management of construction projects in particular. Not only have they applied it successfully, they have adapted it to meet the needs of construction management over time.

Criteria #3: Credentials/expertise of the author/s

The expertise and credentials of the author/s are probably the most significant evaluation factor. If literature is written by someone unqualified or insufficiently qualified in the area, there is very little reason for you to be using their work to help you build your knowledge base.

The books and journals that you access through the Library are almost always published by highly reputable publishers who take a lot of care to ensure that they use authors who are sufficiently expert to be published in the area. But, that doesn't mean that all authors of scholarly works are legitimate and trustworthy. Human beings and systems being what they are, things will fall through the net from time to time. So, as a researcher, it is your responsibility to ensure that only credible authors contribute to your development and your work.

Sometimes, especially with web-based sources, authorship may not be provided or just a name is provided. In these cases, you (the researcher) must confirm the credentials of the author. Yes, it may take time (time you feel you don't have) but it is your responsibility to do it.

At other times, especially with reports produced by organisations, no author/s will be provided but the organisation's name will be prominently placed on the document. The organisation may even be the publisher. Again, you will frequently see this with (report) literature provided through the Web. In these cases, you should evaluate the credentials of the sponsoring or publishing organisation.

Peer review

The peer review process is an important process that helps to ensure that publishers publish high quality work. Journal articles, conference papers, books and other literature can be peer reviewed (refereed).

Watch this three minute video (from North Carolina State University Library) explaining the peer review process.

You must still think critically when evaluating peer reviewed (refereed) literature. Human beings and systems do sometimes fail, and papers can fall through the peer review net. As well, the peer reviewers have not read the paper with **YOUR** research needs in mind.

Criteria #4: Clear and logical development and presentation of ideas and arguments

There are seven questions to be considered here. But, not all seven will apply to all literature so (in practice) you will just apply those that are relevant to each piece of literature that you are considering using. The seven questions are:

1. ## Are the purposes of the work clearly articulated?

   The abstract and/or introduction should make the purposes of the work clear. They should also signal what the reader can expect to learn from the piece of literature.

   If you are very new to the topic, reading the abstract, introduction and conclusion should help you decide whether or not the paper is worthy of your attention

2. ## Are there appropriate and sufficient references to support assertions made or assumptions used?

   References act as evidence, giving the work substance and credibility. You need to understand not only what is being referenced, but why it is important to the work that you are reading

3. ## If the topic is contentious, are different perspectives considered?

   You cannot expect authors to explicitly address all perspectives on the topic/s of the paper, book, etc. Some authors will, but many will refer to alternative perspectives with greater subtly while focusing most of their attention on their own arguments for the topic

   If you are reading critically and developing a good knowledge of your topic, you will begin to be able to see where the alternative perspectives are likely to come. And, if they are not presented, you will be able to seek them out for yourself.

   If you have searched the literature comprehensively, it is likely that you will have been alerted to the fact that there is argument in your research community, and that you need to consider those arguments fully.

   Hopefully, at this point, you are also thinking back to *Criteria #1*. If you have analysed your potential biases, you will also be alert to any confirmation bias that could limit your ability to recognise and acknowledge different perspectives at play and give them the respect that sound research requires

4. If the results of research are presented, are they fully discussed?

Not only will a good author make their research question clear, they will also include a clear description of their research methods. They will also discuss their results fully, making conclusions that are consistent with the data and the analysis presented.

If these things are not clear, it becomes very difficult to judge the quality of the research and the role that it should play in your knowledge development and in your research work

5. Are tables and diagrams clear and do they complement or clarify the text?

Tables, diagrams, graphs, photographs, etc should all help you understand what has been written in the text. And, they should be closely related to the text.

If they are irrelevant to the text or they are not easily understood, they should not be there. Furthermore, they may give you an indication of the quality of the work in general.

If you have to spend half an hour examining a diagram and re-reading the text to understand what it is actually saying, it's not much use to you. If it confuses you or misleads you, that is just as problematic as poorly written text as they can both lead you to take inappropriate research actions

6. Is emotive language used?

Emotive language has no place in the professional or scholarly literature. Literature should be presented in an objective manner. It should never use emotion to lead you to particular conclusions.

It is not surprising that an author is passionate about their topic; writing and research are hard work and a belief in the value of the work helps sustain all that effort. But, a researcher's/author's passion for their topic should be expressed through the presentation of objective and thorough work as this lets **you** judge the work's quality

7. Are research conclusions consistent with the data, analysis and discussion presented?

Research conclusions should be consistent with the data, analysis and discussion presented. If they are not, the value of the paper, report, etc should be looked upon with extreme caution.

Criteria #5: Quality of the evidence presented

Reviewing the quality of evidence presented in a piece of literature is not a simple task. But there's good news. In undertaking the "quality review", you will also be doing a lot of thinking that can also be included in the write up of your literature review – assuming that you decide to include the paper, of course. Even if you don't include it, the critical thinking that goes into rejecting it will also be helping you think through your research topic and tasks more.

The five questions to ask yourself are:

1. What kind of evidence is being presented?

The literature can present researchers with all kinds of evidence and information useful to the research project. Recognising the kind of evidence and information will help you decide whether a paper (book, etc) can play a role in your research, including your literature review, and what kind of role it can play. Let's look at a few different types of literature to see more:

i. **Literature review –** imagine how helpful it would be if you found other literature reviews related to your work? You could use their reference lists to help you ensure that you have found all the important published work in the area. You could also see what insights the authors have gained and whether these can help you. Their analyses may also help you understand the topic better, or you may disagree with an analysis presented. But in both cases, you are thinking critically about your research and starting to gain evidence for your literature review

ii. **Paper reporting on some original research –** imagine how much you can learn from seeing how someone else set up their research (what questions they asked, how they conducted their experiments, surveys, etc), their analysis of the results could give you valuable insights into the kinds of work that you might do with your own data, or they might apply a relevant theory that you have never heard of. Of course, this all assumes that you think that the research is sound.

If you think that it is unsound, you can still learn a lot of lessons and avoid a lot of mistakes by seeing the mistakes that others have made. It's often said that we learn more from our mistakes than we do from our successes. But, we don't always learn what we could from other peoples' mistakes

iii. **An intermediate level textbook** on a topic that you need to understand – this book might not even appear in your literature review but it will contribute a lot to you gaining a full understanding of some of the basics associated with your research.

Another very important question here is related to whether qualitative data or quantitative data, or a combination of both (mixed) will provide the best evidence for answering the question/s posed in the paper. These methods are discussed elsewhere in the course but if you would like to see an alternative explanation, you might find these videos helpful:

- *Comparison of quantitative and qualitative data* – Spend nine minutes and you'll get a comprehensive explanation of each. The presenter moves through things very quickly so you may want to make good use of the pause button and have pen and paper (or your mobile device) handy - https://www.youtube.com/watch?v=2X-QSU6-hPU

- *Qualitative research* - In this ten minute video, a delegate at a STEM meeting (professor from the University of Nottingham) talks about the major aspects of aspects of qualitative research as he sees them - https://www.youtube.com/watch?v=2is-BtwIrKI

- *Quantitative research* – I couldn't find a video that I liked so, if you have a look at the reliability and validity videos that are coming up, you'll see validity and reliability discussed *within the quantitative research context*. If you find a video that you like, please let me know so I can share it with your current classmates and future students.

2. Is the evidence up-to-date?

You should also consider *when* the referenced sources were published to ensure that they are sufficiently up-to-date to reflect "current thinking", and to ensure that all relevant earlier work has been included in any analysis presented

3. Is the evidence valid?

Does the research methodology allow the researcher to produce evidence that truly measures what the research claims that it measures? Put another way, "Validity is the extent to which the research produces an accurate version of the world" (Bloor & Wood 2006, p. 148).

Validity can be very hard for the novice researcher to judge. But, it is impossible for even experienced researchers to judge validity if the research method/s and results aren't

properly explained. Your supervisor is a good person with whom to discuss questions of validity. You can also compare the methods and findings of similar research to see if other researchers use similar kinds of methods to answer similar questions.

Validity is discussed in more detail elsewhere in the course. If you need to look at an alternative explanation, I found some YouTube videos that provide nice explanations, so you might like them too. These are sports science examples but don't be put off – scientific research methods are scientific research methods no matter what the subject area so you can still learn a lot from them. There are four types of validity and there is a video for each:

- *BTEC Research Methods: Week 2: Internal Validity* - https://www.youtube.com/watch?v=zsyXIpc4DYM
- *BTEC Research Methods: External Validity* - https://www.youtube.com/watch?v=OIs7kRVjhvE
- *BTEC Research Methods: Construct Validity* - *https://www.youtube.com/watch?v=HHRHLRHZ9BE*
- *BTEC Research Methods: Criterion Validity* - https://www.youtube.com/watch?v=6V287SnEbfQ

4. Is the evidence reliable?

"Reliability is concerned with the extent to which research findings are reproducible, that is whether a different researcher who replicated the study would come to the same or similar conclusions" (Bloor & Wood 2006, p. 148). As with validity, no researcher can judge reliability if the research method/s and results aren't fully communicated in the paper.

Again, this can be hard for a novice researcher to judge so again your supervisor is a good person to talk to. And, just as with validity, you could compare the research methods of other studies looking to achieve similar things.

Once again, if you would like to look at an alternative explanation of reliability, the SCD has a nice YouTube video - https://www.youtube.com/watch?v=1nIQ6h1Aigk .

5. If comparisons are being made, are they meaningful?

Judging comparison can also be tricky. But, even a novice researcher will often be able to make some judgements about the nature of the comparisons. But, you will have to be focused and thinking critically to do it. Comparison of data and methods is another good thing to discuss with your supervisor when you're feeling unsure about its importance.

Criteria #6: Quantity of evidence presented

To review the quantity of evidence presented in a piece of literature, there are two important questions to ask yourself:

1. Is evidence presented for all of the assertions and/or conclusions made?

   If a piece of literature doesn't provide evidence for all of the assertions and/or conclusions made, and you think that it could be useful to your research, you will have to look for other sources of evidence to "back up" the claims made in this source. That's not necessarily a bad thing – authors of papers, books, reports, etc rarely have the luxury of using as many words as they want to cover all of the content they wish to cover. Often writing is a balancing act and an author may choose to not spend precious words on lots of explanation for assertions or conclusions when they know that there is readily available literature that their readers can easily consult should they choose to do so.

   At other times, a lack of evidence to support assertions and conclusions is a problem as it may be a reflection on partially completed, biased, invalid or unreliable work. As a "researcher on L Plates", you will need to learn to make judgements about literature that doesn't present sufficient evidence. It's also another one of those good things to discuss with your supervisor

2. Is the evidence sufficient, or do you need more evidence to judge the value of the work to your own knowledge development and research work?

   As you can see, this is very closely related to the first question. It's also related to *Criteria #5: Quality of evidence*. At a surface reading, a piece of literature can seem to present a lot of evidence, but on deeper consideration you see that the evidence is either irrelevant to your needs or questionable in itself. It doesn't matter how much questionable or irrelevant evidence an author lines up, it will never be evidence that a researcher can use.

Criteria #7: Writing mechanics

Writing mechanics should never be underestimated. It doesn't matter how strong research is or that all of the other evaluation boxes are ticked, if the writing mechanics are poor, readers will never be sure that they truly understand what is being communicated. It is also possible that sloppiness in writing mechanics is a reflection on the work in general.

I'm sure that we all know that spelling and grammatical errors should always be avoided. But, have you thought about some other writing habits that affect the reader's ability to understand literature:

- Wordiness – using more words than necessary to say something. The more words that a person has to read, the harder the work is to understand, and the more likely it is that the reader will have to read the same thing two or three times to ensure that they do truly understand what is being said. Over twenty years ago a lecturer said to me, "Never use two words when one word will do". I've never forgotten that advice – it has served me well over the years
- Using unnecessarily big words - some authors feel that using big words makes them sound more authorative. But, it can just distract from your message. The same lecturer who gave me the *one word/two words* advice finished off that message with, "And, never use a big word when a little word will do". I still follow that advice.

Having said that, language should always suit the audience. Researchers are writing for fellow researchers, practicing professionals and academics. So, they should be using professional and scholarly language.

Referencing is also an important written communication tool as it provides the critical "markers" to evidence and demonstrates the author's command of the topic. Inadequate and/or incorrect referencing can be very distracting to the reader as they are continually having to question the work:

- What is the evidence for this?
- I'm sure I've read this elsewhere. Are they claiming this to be their own work?
- This is something that I need to double check but there isn't a source referenced for me to quickly check. Perhaps I should be questioning the credibility of the entire paper?

Learning Activity

The scenario:

You are part of a team which needs to decide where a new wind farm should be located. You have dealt with the technical factors affecting the choice and have a number of sites under consideration.

Now you have to work on the social factors. You know that some people will be concerned that the presence of a wind farm has negative impacts on human health.

You need to have a good understanding of the health-related literature so that you can communicate effectively with the communities. You have decided to conduct community meetings and produce your own (objective) literature review to disseminate in the communities.

Task #1:

Now it's time for you to apply the criteria to make your own judgements about two pieces of literature, either or both of which you can reasonably expect that (at least some) members of the communities to have read.

Read both papers and evaluate them according to the criteria:

1. Waubra Foundation 2014, *History of research*, Waubra Foundation, Banyule, Victoria

2. Knopper, LD & Ollson, CA 2011, 'Health effects and wind turbines: a review of the literature', *Environmental Health*, vol. 10, no. 1

You may wish to use these **evaluation templates** to help you organise your thoughts:

Waubra Foundation 2014 **Knopper & Ollson 2011**

Task #2

Now look at my evaluations and see how they compare with your evaluations:

- Example evaluation of Waubra Foundation (2014)
- Example evaluation of Knopper & Ollson (2011)

Task #3

Knopper and Ollson (2011) would appear in my literature review, and appear as a credible source. I think that I would also try to use the Waubra Foundation's history (2014) as a vehicle for presenting and then questioning issues being raised by the general public. And, here's how I think that I can do it to ensure that I produce a piece of literature that can be considered seriously by the local communities.

Application of Criteria #1: Potential bias/es

Community members concerned about the possible negative impacts of a wind farm can reasonably be expected to see my work as a biased (as I work for the wind farm company) so my literature review will need to:

1. Be written objectively, clearly and respectfully; particularly as it addresses the contentious issues which I consider to have no foundation and where groups and individuals like the

Waubra Foundation have linked scientific evidence to their own opinions to "create" cause and effect arguments

2. In-text referencing will be carefully located within the text so there is **no** possibility for confusion about what is being referenced. This will help me create the most transparent and accountable document that I possibly can.

Application of Criteria #2: Genuine relevance

My literature review will only include popular and scientific literature which is highly relevant to addressing the concerns. I will not "pad it out" with peripheral literature to try to make the review look impressive. Staying with the highly relevant discussion points and literature will, again, help me create a transparent and accountable literature review.

Application of Criteria #3: My credibility as an author

Given my connection to the proposed wind farm and the likely community emotion attached to the facility, there will probably be people who will refuse to see me as credible no matter what I do. So, my focus will be on those readers who genuinely seek a well informed and objective literature review to help them fully understand the issues and make informed decisions. If you stop and think for a moment about these reader characteristics – well informed, objective, making informed decisions – the characteristics are actually very similar to the characteristics of researchers (and markers of fourth year project dissertations).

As I don't have credentials in the health sciences, I will be "upfront" about the credentials that the expert outcomes do have and briefly describe how they have helped me create a sound literature review. Of course, this wouldn't be necessary in a fourth year project dissertation as your credibility and credentials are already defined – you got to this point of your degree!!

Even though I feel confident that there will be readers who won't see any credibility in my literature review, I won't neglect them. I will still be trying to present a literature review that encourages them to think critically. If they can start to think critically, they may open up their minds to my credibility as the author.

Application of Criteria #4: Clear and logical development and presentation of my argument

As I consider the seven questions for Criteria #4, it strikes me that they are highly related to facilitating the critical reading of a work. And, critical thinking is what I want to encourage my readers to do. So, the presentation of my literature review is going to focus on guiding my audience to think critically – not think what I want them to think, but **to think critically for themselves**.

It's possible that you've heard lecturers talk about critical thinking but that nobody has ever actually explained it to you. If you watch this seven minute video from the University of Western Australia, you'll be well on your way to understanding critical thinking.

So, my literature review will be broken down into sections that deal with each of the issues canvassed by the Waubra Foundation. That way I hope that I am creating a structure that helps people think critically about the arguments (and "evidence") that local community members are likely to be accessing. And, I will be very open about the contentious nature of the subject as I will be linking the research evidence to the concerns expressed by groups and individuals like the Waubra Foundation. Transparency is essential for the communication of evidence.

Application of Criteria #5: Quality of evidence provided

Nina Pierpont's book will feature strongly in my literature review. It appears to be a "classic" in the literature produced by the individuals and organisations working to stop the use of wind turbines. All credible literature reviews address the "classics" as these are the works that influence the research that comes after them. In many cases the classics have had a positive impact on the evolution of a research topic. But, sometimes a piece of literature becomes a classic as it reports on work that has been discounted by further research projects, and so marks an important turning point in our understanding of a topic.

In contentious areas, addressing the classics becomes even more important. As a result, my analysis of Pierpont will have a significant impact on the quality of my literature review, and seriously affect my ability to help the readers think critically about the "evidence" she offers them.

The validity and reliability of evidence is critical to my literature review. I consider that I have strong arguments to show that the concerns about negative health impacts actually draw on arguments and research that are neither valid nor reliable.

Application of Criteria #6: Quantity of evidence provided

Again validity and reliability will help me here as I can use them to show that it doesn't matter how much evidence of this type is provided, it can never be enough to support the findings that the Waubra Foundation and others have made. My literature review will help show that there is a need for different types of evidence if the arguments are to be legitimate.

Application of Criteria #7: Writing mechanics

As I'm trying to present scientific evidence to an audience with varying levels of education and scientific knowledge, and where a reasonable proportion of that audience is likely to

hold firm views, writing mechanics will be particularly important. As I write, the golden rule will be constantly with me – Never use two words when one word will do. And, never use a big word when a little word will do.

What do you think?

So, would either of these papers appear in your literature review? We may not agree on all points in these evaluations but I hope that we came to the same major conclusions. And, can you see that my plan to apply the evaluation criteria to build a strong communication framework, is also appropriate to communicating with a research audience?

Conclusion

Well, that's the literature evaluation criteria. Applying the criteria is not a simple task. It's a skill that grows with practice, and a skill that grows as your subject knowledge base grows. Evaluating the literature also has two benefits – it encourages you to think critically, and you can apply it to the literature that you create (to help you demonstrate your expertise and to present your research effectively).

If you'd like to keep an evaluation criteria list for quick reference later on, this document lists the broad criteria & includes a concise breakdown of the points to consider within each criterion.

References

Bloor, M & Wood, F 2006, *Keywords in qualitative methods*, SAGE Publications Ltd, London, viewed 12 June 2014, <http://resguide.usq.edu.au/index.php?ID=331>.

Casad, BJ 2007, 'Confirmation bias', In RF Baumeister & KD Vohs (eds), *Encyclopedia of social psychology,* SAGE Publications, Los Angeles, viewed 11 June 2014, <http://196.29.172.66:8080/jspui/handle/123456789/3304>.

Duckett, K, Burke, A, Orphanides, A, Chung, H-D, Dorafshar, D & Langdon, K n.d., *Peer review in 3 minutes*, online video, viewed 17 June 2014, <http://www.lib.ncsu.edu/tutorials/pr/>.

Flateby, T & Fehr, R 2008, 'Assessing and improving writing in the engineering curriculum', *International Journal of Engineering Education*, vol. 24, no. 5, pp. 901-905, viewed 24 August 2008, <http://www.ijee.dit.ie/>.

Flipp, C 2014, *Qualitative versus quantitative*, online video, viewed 18 June 2014, <https://www.youtube.com/watch?v=2X-QSU6-hPU>.

Groetzer, TA 2011, 'Public understanding of cognitive neuroscience research findings: trying to peer beyond the enchanted glass', *Mind, Brain and Education*, vol. 5, no. 3, pp. 108-114, viewed 11 June 2014, Wiley Online Library.

Knopper, LD & Ollson, CA 2011, 'Health effects and wind turbines: a review of the literature', *Environmental Health*, vol. 10, no. 1, viewed 20 June 2014, <http://www.ehjournal.net/content/10/1/78>.

National HE STEM Programme 2012, *Qualitative and quantitative research*, online video, viewed 18 June 2014, <https://www.youtube.com/watch?v=2is-BtwIrKI>.

Nickerson, RS 1998, 'Confirmation bias: a ubiquitous phenomenon in many guises', *Review of General Psychology*, vol. 2, no. 2, pp. 175-220, viewed 11 June 2014, PsycARTICLES, item: 1998-02489-003.

Sussex Downs College Sport & PE 2013, *BTEC research methods: criterion validity*, online video, viewed 18 June 2014, <https://www.youtube.com/watch?v=6V287SnEbfQ>.

Sussex Downs College Sport & PE 2013, *BTEC research methods: external validity*, online video, viewed 18 June 2014, <https://www.youtube.com/watch?v=OIs7kRVjhvE>.

Sussex Downs College Sport & PE 2013, *BTEC research methods: week 2: internal validity*, online video, viewed 18 June 2014, <https://www.youtube.com/watch?v=zsyXIpc4DYM>.

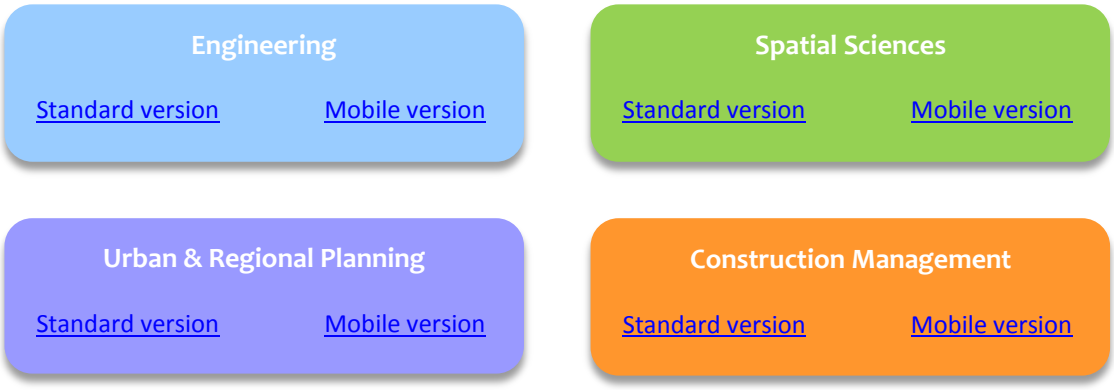
Sussex Downs College Sport & PE 2013, *BTEC research methods: week 3: reliability*, online video, viewed 18 June 2014, <https://www.youtube.com/watch?v=1nIQ6h1Aigk>.

Sussex Downs College Sport & PE 2013, *BTEC research methods: week 4: construct validity*, online video, viewed 18 June 2014, <https://www.youtube.com/watch?v=HHRHLRHZ9BE>.

University of Western Australia 2013, *Thinking at university level at UWA: apply critical thinking*, online video, viewed 19 June 2014, <http://www.youtube.com/watch?v=ikR1rGw_flY>.

Waubra Foundation 2014, *History of research*, Waubra Foundation, Banyule, Victoria, viewed 20 June 2014, <http://waubrafoundation.org.au/health/history/>.

Appendix A: Scientific Research and Literature Cycles



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