If you're a teacher or educator, this practice guide and AERO's other evidence use resources can help you draw effectively on research evidence to strengthen decisions about your practice. If you're a school or service leader, you can use this guide and these resources to support your team in engaging with research evidence as part of their ongoing professional development.
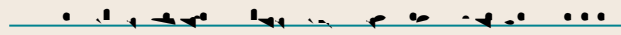
2.0

Principles: Critical reflection and ongoing professional learning.

Standard 7.2 Leadership: Effective leadership builds and promotes a positive organisational culture and professional learning community.

Focus Area 6.2: Engage in professional learning and improve practice, which includes 'Plan for professional learning by accessing and critiquing relevant research' at the Highly Accomplished level.

Professional Practice 2: Developing self and others.

- You can use this practice guide for professional learning to become more familiar with research and to check your knowledge. Use the resources recommended in Table 1 and throughout the guide to find research in reliable web-based sources.

- You can use this practice guide for professional learning to discuss research evidence as a team, such as in a community of practice.

- Leaders can use this practice guide to structure dialogue and reflection about using research evidence in a school or service. These concepts can serve as a point of conversation to build shared understandings of how to engage with research evidence.

Unless you're a student or staff member at a university, it can be difficult to access academic journals that publish high-quality research. As an education professional, you're likely to come across research findings in books, summaries of 'best practice' (for example, in practice guides), blogs and social media, and reported in the news. While it's great that research evidence can be found in so many places, the quality of this type of filtered information is variable and needs careful evaluation.
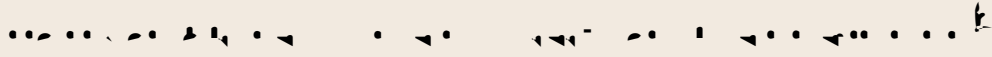
Take the _____

are aimed at a particular professional group such as educators rather than an academic audience. Their content is often high quality, relevant and useful but they're different to academic journals because the content is not usually peer-reviewed and their publication rules are less strict. It's important to be aware that news, opinion pieces and illustrations of 'good' or innovative practice in such publications may be based on anecdotal evidence rather than high-quality research. The authors tend to be practitioners or journalists.

Don't conflate anecdotal evidence with research evidence generated through established qualitative research methods like narrative inquiry. Anecdotal evidence refers to claims made without systematic inquiry and consideration of bias

Grey literature is information that has not been commercially published, such as reports, conference papers, PhD theses and fact sheets. It may be produced by governments, academics, peak organisations, service providers, 'think tanks' and others.

Grey literature can vary in quality. Publications by governments and government agencies are generally considered more credible than other grey literature. Nevertheless, all grey literature should be critically appraised to check for objectivity as it is not peer-reviewed and its aim is sometimes to promote a social or political agenda.

AERO is an example of an organisation that produces grey literature. While AERO's work generally is not commercially published (for instance, in academic journals), as Australia's independent education evidence body, AERO has a strong commitment to rigorous research. 'Rigour' is one of our core Values, and we follow a comprehensive process to ensure our research is high quality.

AERO believes that for our research to be high quality, it must be produced ethically and responsibly. AERO complies with principles to ensure our research:

» pays respect and recognition to all people involved

» has merit and integrity

» is transparent, honest and accountable

» promotes equity and accessibility.

Read about the principles for the ethical and responsible conduct of research underpinning AERO's research.

Evaluation reports are a common form of grey literature evidence about the effectiveness of interventions, programs and policies. While they appear similar to academic research, they may present partial information and can be subject to intentional or unintentional 'spin' in which positive findings are highlighted while negative findings are given less prominence.[1]

Analysis and Policy Observatory (APO) is an open access platform that aims to make public policy research and resources (grey literature, mostly from Australia and New Zealand) accessible and useable. Resources are sourced from a range of organisations including government, agencies, regulators, research institutes, not-for-profits and think tanks.

APO checks that resources are 'credible and well-expressed' before publishing, but they are not peer-reviewed.

B

Books are an excellent source of information but determining the reliability of a book can be harder than you might expect. Scholarly books written for students and academics should be reliable as long as they're not out of date, noting that it can take years to write and publish a book! Books written for a general interest audience may be based on evidence but may also be opinion and/or a subjective presentation of an issue. If you're not sure how reliable a book is, these questions will help:

- Who is the author? Are they an academic? What are their qualifications?
- What experience does the author have with the topic? Are they an authority?
- Who is the publisher? Are they an academic publisher? What else have they published on this topic?
- Are references to academic research or a bibliography (that is, a list of works that the author drew on in writing the book) included?

N   b

If you find interesting research in the news, always seek out the original study or additional sources to confirm the findings. Sometimes reporters simply sensationalise results to attract readers' attention.

Research findings published by even the most reputable news agencies may be misleading, because fitting a research study into a short story or video requires significantly simplifying the message. Peer-reviewed research will always outline the limitations of the research and describe the participants involved, but this information is almost never included in news stories.

For instance, a news headline might read: 'Study shows: Student writing scores are worse on online NAPLAN tests compared to paper-based tests'. The actual research suggests, however, that it's not so straightforward. Students' punctuation was worse on online tests, but they were better at using paragraphs. How using an online mode impacts NAPLAN scores is an area requiring further research.[2]

T   n   n

Wikipedia is not a credible source of evidence when used alone but can be a useful starting point, particularly when entries include a list of academic references to follow-up. It can also help with identifying potential search terms.

Social media, podcasts and blogs may or may not provide trustworthy information so evaluating the credibility of the information is critical. Social media algorithms are intentionally designed to feed each person information based on what they've interacted with in the past. This can create repeated exposure to the same ideas and limit consideration of alternatives, making us more prone to confirmation bias. This means we need to be proactive to ensure we engage with a variety of different sources of information.

> **_Confirmation bias:_** We notice, remember and give more weight to evidence that supports our existing opinion and ignore or dismiss information that contradicts it.
>
> For an overview of other common cognitive biases, see AERO's _The Value of Research Evidence_ practice guide.

If the content is produced by a trustworthy organisation such as AERO, a government department or agency, or a university, it's usually reliable and evidence-based. For other providers of content, think critically about how information shared may be impacted by both intentional and unconscious bias:

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Take our quick quiz below or scan the QR code to test your knowledge about research evidence.

1.

a. it can only be accessed by researchers who are affiliated with universities or research institutes

b. experts in the field have reviewed the research to ensure it meets the high-quality standards required for publication

c. the authors are highly experienced and respected experts in the field

2.

a. the people who write/publish the content may have an agenda or reason to be biased

b. the content is usually peer-reviewed

c. only really popular sites can be trusted

3.

a. is like a regular Google search but for scholarly literature including both peer-reviewed and grey literature

b. is better than a university library because it includes grey literature

c. provides access to all the same research as a university library

4.

4.1. News sites sometimes simplify research findings so much that the content is misleading or inaccurate.

4.2. Books are usually a more reliable source of evidence than academic journal articles because they're longer and more comprehensive.

4.3. Wikipedia is reliable because thousands of people contribute to its articles and can correct each other's mistakes.

4.4. Articles in practitioner or trade publications are reliable because the content is usually peer-reviewed and their publication rules are strict.

4.5. Evaluation reports can look the same as academic research but they may be subject to intentional or unintentional 'spin' that highlights positive findings.

For an overview of different types of evidence and biases to be aware of when reading about evidence, see AERO's The Value of Research Evidence practice guide.

For guidance on how to assess research evidence once you've found it, see AERO's Assessing Research Evidence practice guide.

For guidance on how to apply research evidence, see AERO's Applying Research Evidence practice guide.

Answers: 1(b), 2(a), 3(a), 4.1(True), 4.2(False), 4.3(False), 4.4(False), 4.5(True).

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1   See for example: Vaganay, A. (2016). Outcome reporting bias in government-sponsored policy evaluations: A qualitative content analysis of 13 studies. *PLoS One*, *11*(9), Article e0163702. _____

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