

AI and Academics

Calming the farm

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Semester 1 & 2 2023, Semester 1 2024

**“Generative AI tools cannot be used
in this assessment task**

**In this assessment, you must not use
generative artificial intelligence (AI)
to generate any materials or content
in relation to the assessment task.”**

Examples taken from Monash Moodle units in Psychology and Occupational
Therapy

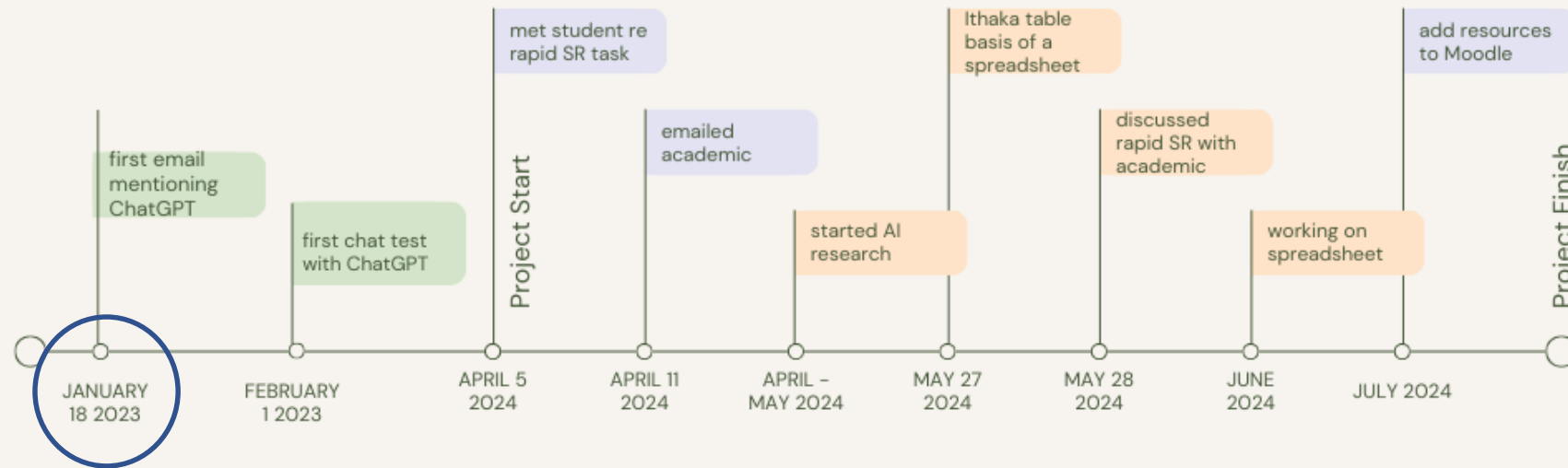
“AI tools may be used
selectively within assessments
as specified by the Chief
Examiner. Please see and
follow the specific guidelines
outlined for each assessment
task. Where permitted in an
assessment, AI must be used
responsibly, clearly
documented and appropriately
acknowledged ([see Learn HQ](#)).”

Semester 2 2024

PROJECT TIMELINE



Thomas Rowlandson, CC0, via Wikimedia Commons



LEGEND:

pre project interactions research

Tsafnat et al. Systematic Reviews 2014, 3:74
http://www.systematicreviewsjournal.com/content/3/1/74

Table 1 Examples of tools used for the automation of evidence synthesis tasks

Step	Example application	Description	Limitations
Search	Quick Clinical	Federated meta-search engine	Limited review
Search	Sherlock	Search engine for trial registries	Limited
Search	Metta	Federated meta-search engine for SR	Not available
Snowballing	PanCit	Reference string extraction from published papers	Does not
Screen titles and abstracts	Abstrackr	Machine learning-based abstract screening tool	May require
Extract data	ExaCT	PICO and other information element extraction from abstracts	No assessment only available
Extract data	WebPlotDigitizer	Re-digitization of data from graphs and plots	No support for recognition
Meta-analyze	Meta-analyst	Create a meta-analysis from extracted data	Limited program
Write-up	RevMan-HAL	Automatic summary write-up from extracted data	Only available
Write-up	PRISMA Flow Diagram Generator	Automatic generation of PRISMA diagrams	Does not

Table 1: The systematic review toolbox.

Systematic Review Processes and their Tools	Link	Description
Research Rabbit for literature search [18]	https://www.researchrabbit.ai/	Research Rabbit is a tool for mapping the literature. It searches prior and subsequent researches concerning submitted articles. It uses visualization, demonstrating relationships between relevant papers. The author can use the platform to share the content with the rest of the team.
Covidence for study selection [11]	https://www.covidence.org/	Covidence is a web-based software platform managing systematic review writing. Besides study selection, it includes full-text review, bias appraisal, data extraction, and data export into RevMan.
RobotReviewer for critical appraisal of the literature [19]	https://www.robotreviewer.net/	The RobotReviewer is an ML system that evaluates biases in randomized controlled trial studies.
Lateral for data extraction		Lateral searches for the common terms across all articles at once. It shows similar

COVID-SEE	https://covid-see.com/search
COVIDScholar	https://covid scholar.org/
LitSuggest	https://www.ncbi.nlm.nih.gov/research/litsuggest/
BioReader	https://services.healthtech.dtu.dk/service.php?BioReader-1.2
Connected papers	https://www.connectedpapers.com/
Litmaps	https://www.litmaps.com/
Literature mining for knowledge discovery	
PubTator	https://www.ncbi.nlm.nih.gov/research/pubtator/

Scoring article candidates based on user-provided positive and negative articles.

Recommending relevant articles to one or more seed articles using the citation graph.

Highlighting biomedical concepts in the retrieved documents.
Linking the extracted concepts from the search results.
Linking directly and indirectly associated concepts to the given concept.
Displaying graphs of biomedical concepts and their relations extracted from the retrieved documents.

AI Search Tools

AI search tools can find articles through machine learning and large language models (LLMs). However, they do not replace systematic, structured searching in scholarly databases. Presented below are the top-rated tools evaluated by Monash Health librarians.



Tool	Cost	Full Text Linking	Export Options	Source of Citations	Product Support	Rating	Best for
Consensus.app	Free	Yes	Link	Semantic Scholar	Detailed	9/10	Generating a summary from multiple articles
Evidence Hunt	Free	Yes	CSV	PubMed, NICE	Limited	9/10	Generating a summary from recent articles
Lens.org	Free	Yes	BibTex, CSV, RIS, JSON	Microsoft Academic, CrossRef, PubMed, OpenAlex	Detailed	9/10	Finding additional articles, including grey literature
Semantic Scholar	Free	Yes	BibTex, EndNote	PubMed, BioRxiv, MedRxiv, and directly from major publishers	Detailed	9/10	Generating a summary from individual articles Getting alerts for new articles
Elicit	Based on a credit system. Get a limited amount of credits with a free account	No	BibTex, CSV, RIS	Semantic Scholar	Detailed	8/10	Generating a summary from multiple articles
Litmaps	Search up to 20 inputs with the free account	Yes	BibTex, CSV, RIS	Crossref, Semantic Scholar, OpenAlex	Detailed	8/10	Finding additional articles
OpenAlex	Free	No	CSV, TXT	Microsoft Academic, Crossref, ORCID, DOAJ, Unpaywall, PubMed, web crawls, and more.	Detailed	8/10	Finding highly cited articles
Scinapse	Paid account offers additional analytics	Yes	BibTex, CSV, RIS	PubMed, OpenAlex, Semantic Scholar, Microsoft Academic, and more	Limited	8/10	Finding additional articles
Additional Tools							
Honourable mentions (7-6/10)	Dimensions, Scite, Perplexity, Texter.io, LitSense			Dishonourable mentions (5/10 and below)	ResearchRabbit, MirrorThink, Copilot, Phind, ChatGPT, SciSpace, OpenRead, Google Gemini, Claude		

April, 2024

1	PubMed Classifier (1)	Screening	NLP, AI	2019	1	https://github.com/ruggerio/pubmedclassifier
8	RAPIOR (*)	Data extraction	NLP	2021	1	https://github.com/Coohy-and-chapman/RAPIOR
9	Rules_cochraneviews (*)	Screening, Data extraction	NLP	2020	1	https://github.com/dsurnan/rules_cochraneviews

Scite.ai <https://scite.ai/>

Jenni.ai <https://jenni.ai/>

- Assists in formulating well-thought research questions during the early phases of a systematic review which can help to brainstorm a research question.
- Refines research questions by providing diverse perspectives and structured approaches, enhancing the brainstorming process.
- Summarizes text data into concise, meaningful abstracts, thus saving time
- Helps in structuring the introduction by generating suggestions based on provided information.
- Allows the creation of unique writing personas and writing voices, enhancing the manuscript's style and tone.
- Finds citations related to GPT-generated responses, allowing for the user to find relevant sources to cite.
- Facilitates the writing process by offering prompts and

Speed Up Your Literature Review with AI: A Step-by-Step Guide



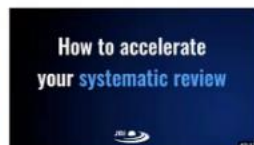
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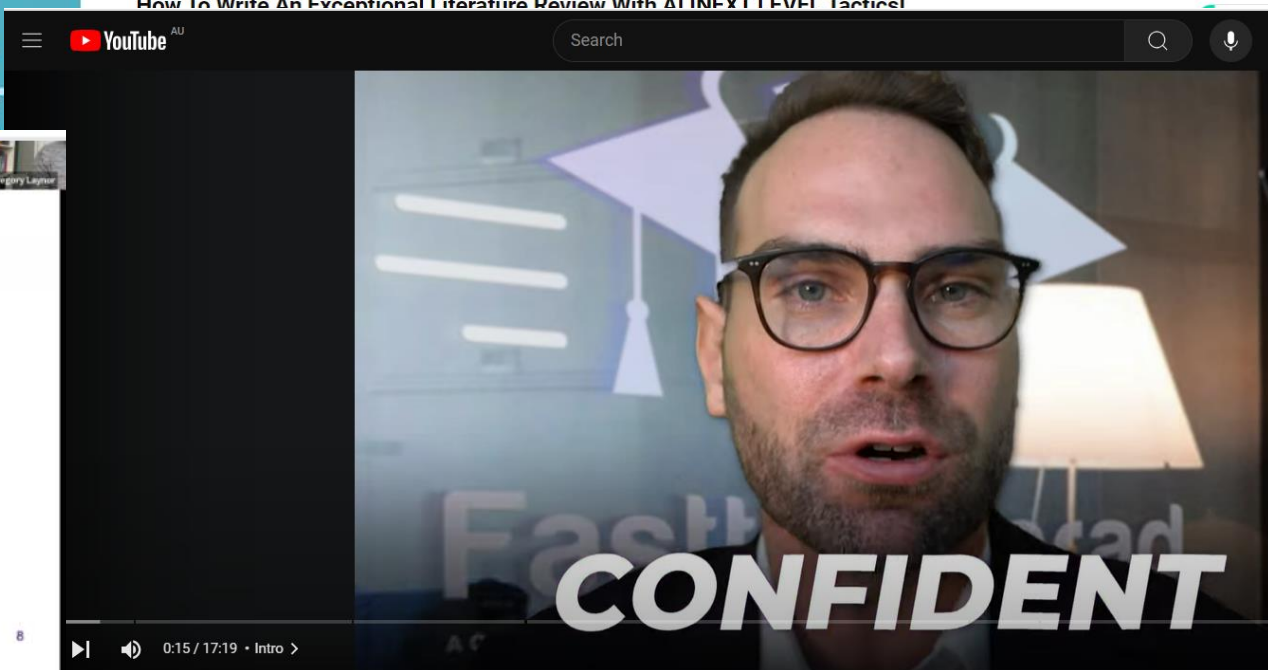
9



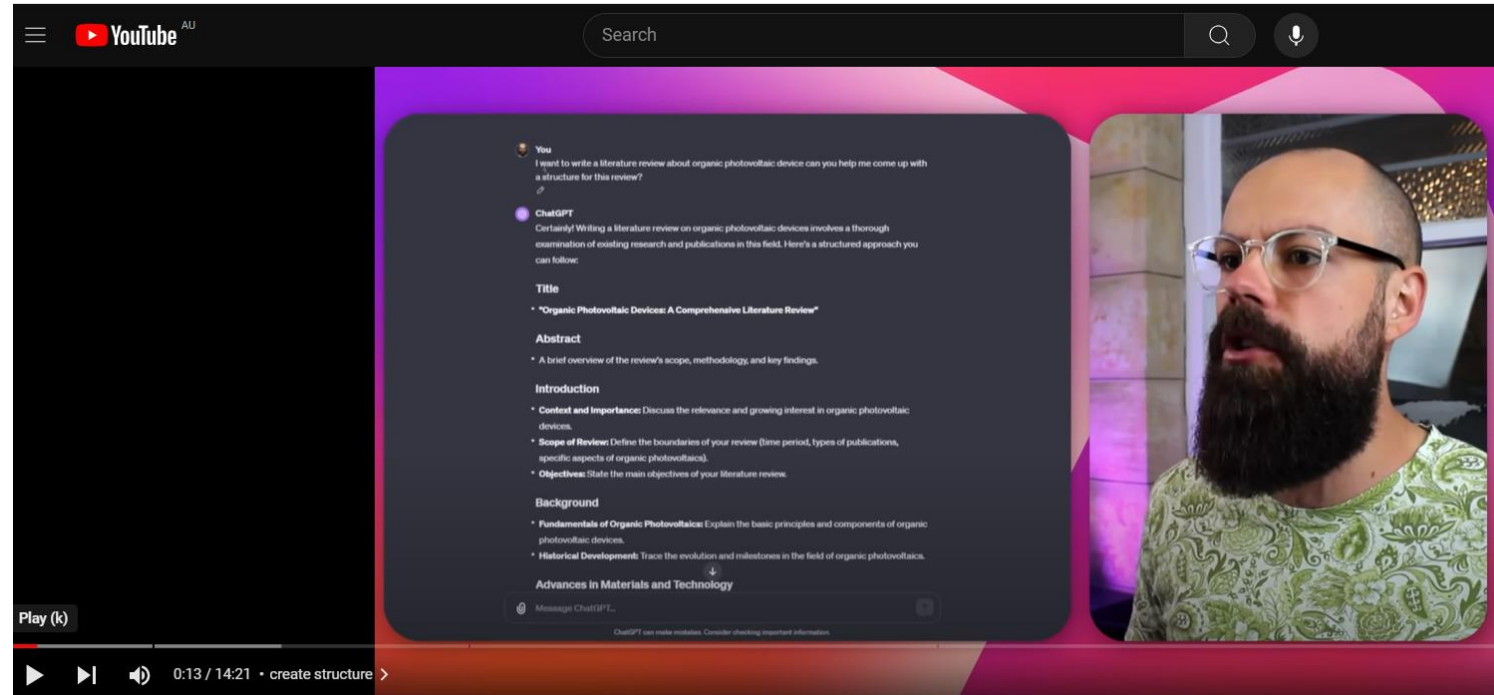
Systematic Review in an Hour?



Gregory Legner



How To Automate Your Literature Review ETHICALLY Using ChatGPT (Prof. David Stuckler)



How To Write An Exceptional Literature Review With AI [NEXT LEVEL Tactics]



[Flickr Thomas Cizauskas](https://www.flickr.com/photos/thomascizauskas/10000000000/) Oh my god....(warning: colourful language used) <https://creativecommons.org/licenses/by-nc-nd/2.0/>



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Flickr Lee Craven
<https://creativecommons.org/licenses/by/2.0/>

Recap:

- Issue identified
- Gen AI @ Monash
- Engage
- Find tables
- Bad videos
- Sliding into a sinkhole
- Realisation – create my own table

Researching for your literature review: Develop a search strategy

Home
Literature reviews
Literature sources
Before you start
Search strategies - Health/Medical topic example
Develop a search strategy
Keyword search activity
Subject search activity
Combined keyword and subject searching
Online tutorials

Identify key terms and concepts

Start developing a search strategy by identifying the key words and concepts within your research question. The aim is to identify the words likely to have been used in the published literature on this topic.

For example: *What are the key infection control strategies for preventing the transmission of **Meticillin-resistant Staphylococcus aureus (MRSA)** in aged care homes.*

Treat each component as a separate concept so that your topic is organised into separate blocks (concepts).

For each concept block, list the key words derived from your research question, as well as any other relevant terms or synonyms that you have found in your preliminary searches. Also consider singular and plural forms of words, variant spellings, acronyms and relevant index terms (subject headings).

Search concept 1	Search concept 2	Search concept 3
KEYWORDS	KEYWORDS	KEYWORDS
infection control	meticillin resistant staphylococcus	aged care homes

<https://guides.lib.monash.edu/researching-for-your-literature-review>

Nah!

Yeah!

Systematic Review: Getting started

Home
Getting started
Manuals, documentation & PRISMA
Develop question & key concepts
Look for existing reviews
Scoping searches & gold set
Identify search terms
Select databases & grey literature sources
Develop criteria & protocol
Run your search
Limits & filters

What is a systematic review?

We recommend that you closely follow the steps on this guide to create your systematic review. A systematic review (SR) is a type of [literature review](#). Unlike other forms of review, where authors can include any articles they consider appropriate, a systematic review aims to remove the reviewer's bias as far as possible by following a clearly defined, transparent process. [This Cochrane video](#) gives a clear summary, but you should find examples and methodologies for your specific discipline as there are various approaches to systematic reviews that differ from those in Medicine.

Systematic review workflow



<https://guides.lib.monash.edu/systematic-review>

AI Research Tools

These are software applications, platforms, libraries, and resources are specifically designed to support and facilitate research in the field of AI. These tools provide functionalities that aid researchers in various aspects of research development, experimentation, analysis, and collaboration. They encompass a wide range of capabilities, from data collection and pre-processing to model training, evaluation, and visualisation.

Semantic Scholar +

Perplexity +

ResearchRabbit +

Connected-Papers +

Elicit +

Explainpaper +

Nutshell +

SciSummary +

Genei +

QuillBot +

Otter AI +

AI Design Tools

These software applications, platforms, and plugins leverage AI technologies to assist designers and creative professionals in various aspects of the

AI Video Generators and Editors

AI video generators and editors refer to software applications or platforms that utilise AI technologies to create, edit, enhance, or manipulate videos

AI Image and Art Generators and Editors

These are software applications or platforms leverage AI technologies, to create, modify, enhance, or manipulate images and artworks.

<https://www.ai-learning-circle-mon.com/exploring-evaluating-and-using-ai-tools>

Active learning >

Active blended and online teaching >

Artificial intelligence in education at Monash ▼

About AI

Responsible use of AI at Monash

AI literacy

Teaching about and teaching with AI

Communication with students about AI

AI and assessment

Generative AI in education webinar series

As part of our efforts to help staff negotiate the opportunities and challenges of accessible generative artificial intelligence technologies (e.g. ChatGPT, DALL-E), the Monash Education Academy is running a series of short lunchtime webinars (please note these are for Monash staff only). Each webinar will be 45 minutes, with a short presentation followed by Q&A discussion with audience participants. Topics proposed so far include:

- A closer look at some generative artificial intelligence tools
- Detection and approaches to shoring up academic integrity
- Students' perspectives on generative artificial intelligence in teaching and learning
- Examining the ethics of generative artificial intelligence in education
- Various case studies of use of generative AI in teaching and assessment



Suggestions form

To help us make these webinars relevant to you, we have created a Google form for staff to submit questions in advance. We have also created a place in each form for staff to suggest topics for future webinars.

Moodle toolkit

Library recommended resources for reviews as assessments using AI



'A typology of reviews: an analysis of 14 review types and associated methodologies'

If you are contemplating setting an assessment that requires students to complete some type of literature review, the first thing we recommend reading is this article by Grant & Booth. This is a seminal article that initially discussed the

Grant MJ and Booth A (2009) 'A typology of reviews: an analysis of 14 review types and associated methodologies', Health Information and Libraries Journal, 26(2):91-108, doi: [10.1111/j.1471-1842.2009.00848.x](https://doi.org/10.1111/j.1471-1842.2009.00848.x)

Booth's latest book - Booth A, Sutton A, Clowes M, Martyn-St James M and Booth A (2022) [Systematic Approaches to a Successful Literature Review](#), 3rd edn, SAGE, London, talks about an unpublished list of 120 types of reviews that are considered "systematic approaches" (Preface p.xviii)

Systematised reviews best suit students working on their own (not part of a team), where they take elements of a systematic type review and do the best they can. (Table 1 p. 95 Grant & Booth) in a short timeframe.



Researching for your literature review

This particular library guide was apparently created for RAD students some years ago. I would point students to this guide, particularly the *Search Strategies for Health/Medical topic example* section rather than our [systematic review guide](#).



Systematic searching video

Students can [watch this video](#) about doing a systematic search. We have numerous videos and tutorials on both guides provided above. They create a concept map with search terms and subject headings, putting it together in an initial [sheet](#).

Once students have a search that we can evaluate for effectiveness, that is the point at which they can speak with a librarian if they need to. Initially, they need to [Meet with a librarian](#). If we think they need more than a 15-minute session

Learning Activity: Ask an expert

Take on the role of an interviewer who is asking relevant and thought-provoking questions about your topic to a Generative Artificial Intelligence expert. You will develop relevant prompts, evaluate and critique the responses received and the

Task 1: Using Generative Artificial Intelligence

Task purpose: This task introduces you to the use of Generative Artificial Intelligence and prompting on ChatGPT.

Approximate time commitment: 30 mins

Task instructions:

Using Generative Artificial Intelligence involves multiple stages. You should start by developing a detailed prompt. From here, you need to critically analyse the response the program gives you to determine if it is useful, and if the prompt needs using Generative Artificial Intelligence and creating meaningful prompts.

As you are interacting with the below resources, start to make notes about the types of prompts you will use, and how you will evaluate the responses by linking them back to your class notes.

1. Watch: Using AI Ethically (3 mins):

Watch the video below for an overview of using Generative Artificial Intelligence ethically in your studies. This video was produced in partnership with Monash University students.



Using AI tools for literature review assessments

Based on the [Monash literature review guide](#), what are some AI tools that could help at each step? Students should familiarise themselves with Monash University's advice on the [use of artificial intelligence](#) and the importance of maintaining academic integrity.

Rationale for tool selection:

- Free to use
- Uploading PDFs sourced from Monash University Library is not required or encouraged
- Tested and relatively simple to use (instructions provided)

Step	Tool	Notes, 'how to' videos, articles to read
Define your research question	ChatGPT 4o – do not share personal or private data with this tool.	Monash video shows how generative AI can be used to help develop/start research questions https://www.youtube.com/watch?v=bxnXggNMQYk (3.45 mins) Monash Learn HQ website for students - creating effective prompts https://www.monash.edu/student-academic-success/build-digital-capabilities/create-online/creating-effective-prompts-when-using-artificial-intelligence Master the Perfect ChatGPT Prompt Formula (in just 8 minutes)! https://www.youtube.com/watch?v=jC4vSAS4RIM (8.29 mins)
Identify relevant search terms from your research question <ul style="list-style-type: none">• Do some scoping searches for relevant articles	Elicit – students should not upload pdfs into this AI tool as it will keep and use this data.	Students can ask the Elicit AI assistant their research question and it will produce a summary of the top 4 papers. Add columns to view specific elements of the articles. Students should find and read full text of relevant articles. About Elicit - https://ought.org/elicit

[Link to this Google doc](#)

This presentation's paper and slides will be available in [Bridges](#) doi:10.26180/26828611



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