MIE315: Literature Review Workshop
2020
The Literature Review Assignment

Guidelines for preparing for your Preliminary Literature Review

You’ve been asked to do a preliminary literature review to get your team started on the term project. This assignment is individual; however, you must coordinate as a team to figure out what the project demands, what you know, and what you need to know—and you need to strategize for dealing with the unknown gaps that will inevitably arise as your work progresses. The following timeline will help ensure an effective process, both for your team and for each of you individually.

Prior to your Library Research Workshop (January 22 or 23):
The Research Planning Worksheets are to be used as a template and guide to help you work towards your final project. It is recommended that you upload each of the empty worksheets to Google Drive (or an equivalent) so that all team members have access to the worksheets in real time. The worksheets are there to help guide your work but they are intended to evolve with your project; you will add more rows as needed and you may find you want to add additional columns for other information you’d like to collect. The associated library research guide1 has links and information to help you with this process.

We have also demonstrated how to use the worksheets with a sample project:

We’re looking at the use of whiteboards vs. digital displays for nursing stations.

- **Worksheet 1:** What You Know and What You Need to Find Out. This worksheet is to be completed by each individual. This will allow each team member to identify what they think are critical areas for the project. **NOTE:** Any column that asks you to identify a team member, leave blank; you will decide this as a team during the workshop.
  - Identify key concepts associated with your project. As your starting point, you may consider (and note this is by no means a comprehensive list):
    - Context of the project: your client and their main goals, the location of the project (and what that may mean in terms of standards, regulations, access, resources)
    - The types of analysis you’re being asked to do
    - The materials/products/processes you’re looking at
    - The nature of the recommendation(s) you’re being asked to make
  - Identify what you know about/related to the concepts. Consider where that knowledge comes from/how you obtained it—understanding that will help you with next steps. Make sure you note which team members have that knowledge and how you will share that information with each other.
  - Identify what you need to find out about/related to the concepts. Note that this may include specific information as well as how to find it.
  - Given what you know and what you need to find out, develop an initial research plan for your team. There is a range of things to consider, including (but not limited to):

1 We’ve hyperlinked the MIE315 Library Guide, but you may also want to explore the whole of the Engineering & Computer Science Library web site which has resources—including other research guides—you may find useful beyond this course.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Unacceptable</th>
<th>Below Expectations</th>
<th>Meets Expectations</th>
<th>Above Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citations</td>
<td>0 % Citation not given</td>
<td>50 % Citation given in incorrect format</td>
<td>80 % Citation given in IEEE format</td>
<td>100 % Citation given in IEEE format</td>
</tr>
<tr>
<td>Weight 10.00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schedule</td>
<td>0 % Project schedule is not provided.</td>
<td>50 % Schedule is provided, but does not show interim milestones.</td>
<td>80 % Detailed schedule provided with key interim milestones including deadlines for completion of background research</td>
<td>100 % Detailed schedule provided with key interim milestones including deadlines for completion of background research</td>
</tr>
<tr>
<td>Weight 10.00%</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Process</td>
<td>0 % Ad hoc search process or no reflection on the search process</td>
<td>50 % Lists search terms with limited discussion about the results or how one source was selected. Search terms were not submitted in advance of the workshop.</td>
<td>80 % Search process and results are discussed with a clear explanation of how &amp; why one source was selected.</td>
<td>100 % Search process and results are discussed with a clear explanation of how &amp; why one source was selected.</td>
</tr>
<tr>
<td>Weight 20.00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credibility of Sources</td>
<td>0 % Questionable websites, blogs, or unsupported information</td>
<td>50 % General knowledge websites, i.e., Wikipedia, unscientific mainstream news articles, etc.</td>
<td>80 % Reliable and authoritative sources</td>
<td>100 % Reliable and authoritative sources with bias identified. More than one type of source was used.</td>
</tr>
<tr>
<td>Weight 15.00%</td>
<td></td>
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</tr>
<tr>
<td>Summarization</td>
<td>0 % No summary or cut and paste from source</td>
<td>50 % Summary is simply a topic statement or a re-statement of the source material in the student's own words (without synthesis).</td>
<td>80 % Summary is concise and in the student's own words. The student identifies key points that are relevant to his/her project.</td>
<td>100 % Summary concise, in student's own words. The student explains what is relevant, its significance, and how the information will be used in their project.</td>
</tr>
<tr>
<td>Weight 30.00%</td>
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</tr>
<tr>
<td>Professionalism</td>
<td>0 % Problems in grammar and sentence structure hinder understanding of key elements of the document</td>
<td>50 % Some problems in grammar and sentence structure hinder readability of prose but not understanding of the document</td>
<td>80 % Grammar and sentence structure are mostly accurate and clear throughout the document.</td>
<td>100 % Writing ready for release in a professional environment. Grammar and sentence structure are accurate and coherent, and clearly communicate complex topics in well-designed paragraphs and sentences</td>
</tr>
<tr>
<td>Weight 15.00%</td>
<td></td>
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Citation Management Systems
Journal articles & conference proceedings
Handbooks, print books & eBooks
Standards, codes, patents and market research
Technical reports, government documents, data (also Map & Data Library https://mdl.library.utoronto.ca/)
Backward and Forward Searching

Trends in energy consumption and carbon dioxide emissions of passenger cars and buses

JA Paravantis, DA Georgakellos - Technological Forecasting and Social ..., 2007 - Elsevier

In this work we develop aggregate car ownership and bus fleet models in order to forecast and compare fuel consumption and CO2 emissions from passenger cars and buses. Greece was selected as a case study, being a country fairly representative of lower-income

References


Advantages of Vaccines

Vaccines provide protection against serious illnesses and prevent complications caused by vaccine-preventable diseases. They help prevent diseases such as measles, mumps, and whooping cough. Vaccines are considered one of the greatest public health achievements of the 20th century.

Benefits vs. Risks | Immunize for Good
www.immunizeforgood.com/fact-or-fiction/benefits-vs-risks

Five Important Reasons to Vaccinate Your Child | Vaccines
https://www.vaccines.gov/guiding/for-parents/five-reasons

Vaccine Basics | Importance of Vaccines | Vaccine Information
www.vaccineinformation.org/vaccines-save-lives

Dangers of Vaccines

Fact or Fiction?: Vaccines Are Dangerous - Scientific American
https://www.sciencemag.org/work/article/115/32/206a

Vaccine Side Effects and Adverse Events | History of Vaccines
https://www.historyofvaccines.org/certified/articles/vaccine-side-effect

Making the Vaccine Decision: Common Concerns | CDC
https://www.cdc.gov/vaccinesparents/parents-why-vaccinate/vaccine-decision

Vaccine Myths Debunked | PublicHealth.org
https://www.publichealth.org/public-awareness/understanding-vaccines

What Every Parent Should Know About Immunizations
https://www.stanfordchildrens.org/topic?id=what-every-parent-should-know

Vaccines cause many harmful side effects, illnesses, and even...
Source Credibility

- CRAAP Test
  - **Currency**
  - **Relevance**
  - **Authority**
  - **Accuracy**
  - **Purpose**

### The CRAAP Check List

Use this checklist to help you assess the credibility of a source. If a statement applies to your source, check the box. If most of the boxes are checked when you get to the end, it is likely a credible source. Note: not all check boxes are relevant or equally relevant to every source.

<table>
<thead>
<tr>
<th>Currency</th>
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<tbody>
<tr>
<td>It has been published or posted recently.</td>
</tr>
<tr>
<td>The information has been revised or updated.</td>
</tr>
<tr>
<td>The information is current enough to answer my question.</td>
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<table>
<thead>
<tr>
<th>Relevance</th>
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<tbody>
<tr>
<td>This source relates to my topic or question.</td>
</tr>
<tr>
<td>The information is written at the appropriate level (e.g., not for elementary school children).</td>
</tr>
<tr>
<td>I would be comfortable citing this in my research paper that is being graded.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>The author have credentials or appropriate organizational affiliations (e.g., researcher at U of T).</td>
</tr>
<tr>
<td>The author qualified to write on the topic.</td>
</tr>
<tr>
<td>The contact information for the author or publisher is provided.</td>
</tr>
<tr>
<td>If it is a website, the URL ends in .edu or .gov.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The information comes from a reliable source.</td>
</tr>
<tr>
<td>The information is supported by evidence.</td>
</tr>
<tr>
<td>The information has been reviewed or refereed (e.g., peer review).</td>
</tr>
<tr>
<td>The information is verifiable (from another source or your own knowledge).</td>
</tr>
<tr>
<td>There are no spelling, grammar or typographical errors.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>The information is fact not propaganda.</td>
</tr>
<tr>
<td>The purpose of the information is clear and appropriate for my purposes (e.g., to teach, to inform).</td>
</tr>
<tr>
<td>The point of view is objective and impartial.</td>
</tr>
<tr>
<td>The writing is clear from biases (e.g., political or personal).</td>
</tr>
</tbody>
</table>

Adapted from: Menden Librarian at California State University, Chico, [2016, September 27]. Evaluating information—Applying the CRAAP test. Retrieved from: [http://www.mendlib.csuchico.edu/uc/evaluate.html#websites](http://www.mendlib.csuchico.edu/uc/evaluate.html#websites)
Always try to trace back to original source!

Accuracy?

Purpose?

NO mention of skin cells!
Techno-economic analysis of solar photovoltaic power plant for garment zone of Jaipur city

Mevin Chandel, G.D. Agrawal, Sanjay Mathur, Anuj Mathur

Centre for Energy and Environment, Malaviya National Institute of Technology, Jaipur 302017, India

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[14] What is maximum power point tracking (MPPT) and how does it work.
immediately after hatching larvae were transferred to new aerated 1000mL aquariums (densities of 15-25 larvae per aquaria), containing one of the three different microplastic particle concentrations. A total of 15 different glass aquaria (five replicate aquaria per each of the three microplastic treatments) were used to expose larval fish in each study.

purchased from Polysciences, Inc.). In the current experiment we reared pereh in one of three polystyrene microparticle (size: 90μm) concentrations: (1) No microplastics (0 particles/m³), (2) Average microplastics (10 000 particles/m³) and (3) High microplastics (80 000 particles/m³). All water was filtered prior to usage (size: 110 μm; pore size: 0.45 μm) to ensure zero

80 Particles per L with at least 15 fish per L  Max average would have been 5.3 particles per fish!
Environmentally relevant concentrations of microplastic particles influence larval fish ecology

Oona M. Lönstedt*, Peter Eklöv
+ See all authors and affiliations

Science 03 Jun 2016:
Vol. 352, Issue 6290, pp. 1213-1216
DOI: 10.1126/science.aad8828

This article has been retracted. Please see:
Editorial retraction - May 26, 2017
MIE315: Design for the Environment

This research guide is designed to help you complete the literature review and reference components of your assignment.

Welcome

This guide will help you for your term project and to further develop your research skills. Please don't hesitate to email your Librarian Tracy or contact the Engineering & Computer Science Library staff if you have any questions or problems.

Useful Documents

- MIE 315 Project instructions
- MIE315 List of Projects
READING SCIENCE

Science articles can be condensed, full of jargon, and have certain expectations of the background knowledge of the reader. You should expect that some articles will be slow and complex however, you will find that articles follow certain formats that can help guide your understanding.

Here are some tips to help you tackle a science paper.

**Give yourself a few days to read an article over twice.** This will give you time to fill in any gaps you have in background information necessary to understand the article.

**TIP**

Don't be afraid to ask a fellow student, your TA, or a professor for help when you don't understand something.

*Sharing knowledge is the foundation of scholarship.*

USING BASIC SOURCES

As someone new to a field, you will want to find sources for basic information to explain basic concepts and fill in gaps in your knowledge. Choose only well-known, peer-reviewed, and edited sources.

Don't read everything you find. Look for trustworthy sources.

Here are some guidelines to save you time.

**The Personal Website**

A personal website is no more reliable than a guy standing on a street corner handing out homemade flyers. The information is unreliable.

**Wikipedia**

The trouble with Wiki is that it varies in quality across articles. It can be as good as an encyclopaedia, but it can also be as bad as a personal website. You just don't know.

Some Wikipedia articles are sabotaged (e.g., at one point Tony Blair's entry had to be corrected 25 times in one day), but most mistakes come down to a lack of peer-review before publication. For example, a Wiki writer misinterpreted his main source article on the history of the English language. This misreading gave Wiki readers information that was exactly the opposite of what was claimed in the original article.
• Read different sections of the article for different purposes; **don’t** read the whole article start to finish

• Take short sentence notes; **don’t** just highlight

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Source Summary

- Deliverable 1: Preliminary Research Review
- Writing Source Summaries

A note on summarizing your sources

In 1-2 paragraphs, briefly summarize the source in your own words and explain what information from the source will be used by your group for the project.

You've all seen and done summaries before—usually in the form of an Abstract or Executive Summary for an article or report. You know that summaries are about creating a brief, but comprehensive, version of a longer document. Abstracts, in academic articles, for example, are often used by readers to decide if the procedures and results are relevant to their own work; Executive Summaries, in consulting reports, highlight the bottom line—usually a recommendation—along with relevant details on context and analysis of a particular problem. These documents are meant to stand on their own, and make sense to a reader without further reading.

What you're being asked to do here is to summarize each of your three sources. But it's not about summarizing everything that's in the source—it's about targeting what you're going to use for THIS specific project. And that means that the same source material will be summarized in different ways by different team members—and, indeed, by different teams depending on how you are using a particular source and what information from the source is of relevance to your topic.
Final Thoughts for the Literature Review Assignment

• Spend the time with your group to decide what each person should research – overlap is good, different research is better

• This is an independent assignment, but collaboration is key