The ART of Literature Studies and Reviews
An attempt to create order in chaos
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The ART of Literature Studies & Reviews

An attempt to create order in chaos

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Today’s Programme

09.30  Introduction and creation of groups round table

09.40  Literature Study & Reviews: What are they? Why do they exist?

09.50  Introduction to Literature Strategies

10.10  Explanation of exercise?

10.20  In Groups: Suitable review type for chosen research questions

10.40  Feedback to plenary per group

10.55  Closing and Main Takeaways
Why this workshop?

Literature Study Part of Research is often:

- Cumbersome
- Lonely with no end in sight
- Confusing
What I won’t be talking about…

How and Where to Search for Literature…
That is a workshop in itself
Phase 1: Laying the foundations
Literature Study vs. Literature Review

Engineering Style: Venn Diagram

- Literature Study
- Introduction / Background of Study
- Theory / Methodology justification
- Literature Review
- Research Outcome Justification
Background of Study

What does it do?
• Provides context for study
• Introduction to research problem
• Highlights why of the study

Where and how?
• Found in Introduction section
• Narrows down to topic
• Also non-scientific sources
• Is short and concise (1-2 p)
Example phrasing:

It is widely reported (Diddly Squad, 2005) that PhD students are lonely. This shows that there is a real need for measures to combat loneliness.
Literature Review

What does it do?

• Critical analysis of existing literature
• Evaluates current state-of-the-art
• Identifies gaps in knowledge

Where and how?

• After introduction and research problem formulation
• Research question led
• Scientific literature only
• Lengthy and detailed (10 p or more)
Sharon & Tracy et al. (2019) investigated the effect of XXX on YYY using research methods Alpha and Bravo. Their findings were that the answer is Charlie.
Theory / Methodology Justification

What does it do?

- Explains where your chosen methods and theories come from
- Explains your research design & analysis choices
- Validation & Verification: Allows for **traceability** and **reproducibility** of your work

Where and how?

- In theory or methods section
- Scientific literature & textbooks
- References used as justification
The questionnaire was field tested as recommended by Field and Hole (2003) ..
Research Outcome Justification

What does it do?
- Adds meaning and context to your findings
- Validation & Verification of your results
- Highlights what is special about your outcome

Where and how?
- In discussion of results section
- Scientific literature and textbooks
- Generally, no new literature introduced but links back to earlier references used
- Can be lengthy, depending on findings
When computing Cronbach’s alpha for our scale, using SPSS™, a value of 0.85 was found. According to Field (2009), this indicates that the scale is reliable.
Phase 2: the building blocks
Literature Review Types

Based on:
A typology of reviews: An analysis of 14 review types and associated methodologies

By: Maria J. Grant and Andrew Booth


DOI: 10.1111/j.1471-1842.2009.00848.x

Note: This is still a field of study in development
14 Lit. Review Types

1. Critical Review

2. Literature/Narrative Review

3. Mapping Review/Systematic Map

4. Meta Analysis

5. Mixed Studies/Methods Review

6. Overview

7. Qualitative Systematic Review/Qualitative Evidence Synthesis

8. Rapid Review

9. Scoping Review

10. State-of-the-Art Review

11. Systematic Review

12. Systematic Search & Review

13. Systemized Review

14. Umbrella Review

[Based on Grant & Booth, 2009]
Approach Grant and Booth (see hand out)

- Using process of *literary warrant* to determine *prevalent terminology*
- All found review types were identified and mapped against **SALSA** Framework:
  - **SEARCH**
  - **APPRAISAL**
  - **SYNTHESIS**
  - **ANALYSIS**
- Characteristics described
- Perceived strength & weaknesses outlined
- Illustrated each by a relevant example from the field of health
Phase 3: Making choices using the SALSA framework
SEARCH

Is about the method used to search for literature:

- Non-Systematic, Comprehensive, Exhaustive (search criteria do not have to be reported) – 1, 2, 6, 7
  - Historic Time Constraint (only looking at a certain timespan) – 10

- Systematic (Search criteria defined) – 4, 5, 11, 12, 14
  - Delivery Time Constraint (final product must be delivered within a timespan) – 3, 8
  -Scoped (limited to certain areas/topics/time periods) – 3, 9
APPRAISAL

Decision on what to include

• No Formal Quality Assessment – 1, 2, 3, 6, 9, 10, 12, 13
  (inclusion is up to the researcher, no formal criteria)

• Formal Quality Assessment – 2, 4, 6, 7, 8, 11, 12, 13, 14
  (such as inclusion/exclusion criteria and/or sensitivity analyses, may be time-limited)
SYNTHESIS

Presenting of findings

• Narrative (e.g. conceptual, chronological, qualitative) – 1, 2, 6, 7, 10

• Tabular with narrative - 5, 6, 8
  • Little narrative – 9, 12
  • Tabular accompaniment – 10, 11, 13

• Tabular and Graphical (e.g. mapping) with narrative – 3, 4, 5, 14
ANALYSIS

How is it analyzed?
• Chronological, conceptual, thematic – 1, 2, 4, 6, 7, 10, 11, 12, 13, 14
• Quantity & quality of literature/evidence – 3, 8, 9
• Numerically – 4, 5

To what purpose?
• Derive new model/theory or hypothesis – 1, 7
• Identify need for primary and secondary research - 3
• Identify previous accomplishments - 2, 4, 5, 8, 10, 11, 12, 13, 14
• Identify gaps, omissions and limitations - 2, 3, 5, 8, 10, 11, 12, 13, 14
• Specify a viable review - 9
Assignment:

In groups use the SALSA framework to design a literature review

1. Choose your research question
2. Select your SALSA methods
3. If time allows, check what type of review it is from hand out

You have 20 minutes
Report Back

Which SALSA options did you choose & why?

Which of the review methods as listed by Booth & Grant (2009) would best fit?
Main Takeaways & Further Research
Main Takeaways

What will you take home from this?  What would did you miss?
Do these 14 types also exist in engineering & education research?

Or are there more or less?

Anyone interested in collaborating to create an overview as in Booth & Grant (2009) specifically for engineering education?