UNIVERSITY OF WALES TRINITY SAINT DAVID & HONG KONG MANAGEMENT ASSOCIATION

HKBM7019

Critical Literature Review

Day 4
Critical in-depth analysis and synthesis

Dr. Tamara Savelyeva

Yong Yongen “Little Boy”

Image credit: Link Chee Art Society Exhibition 2021

“bring together different studies… and to find new meaning from the sum of those papers viewed as a whole than could be obtained by reading each one individually”

Aveyard, 2010, p.124

Literature Review

From description to analysis, synthesis, evaluation

Bloom'Skill sets from lower order to higher order (Each level requires the level below being completed):

Knowledge- comprehension- application

—> to

Analysis- synthesis- evaluation

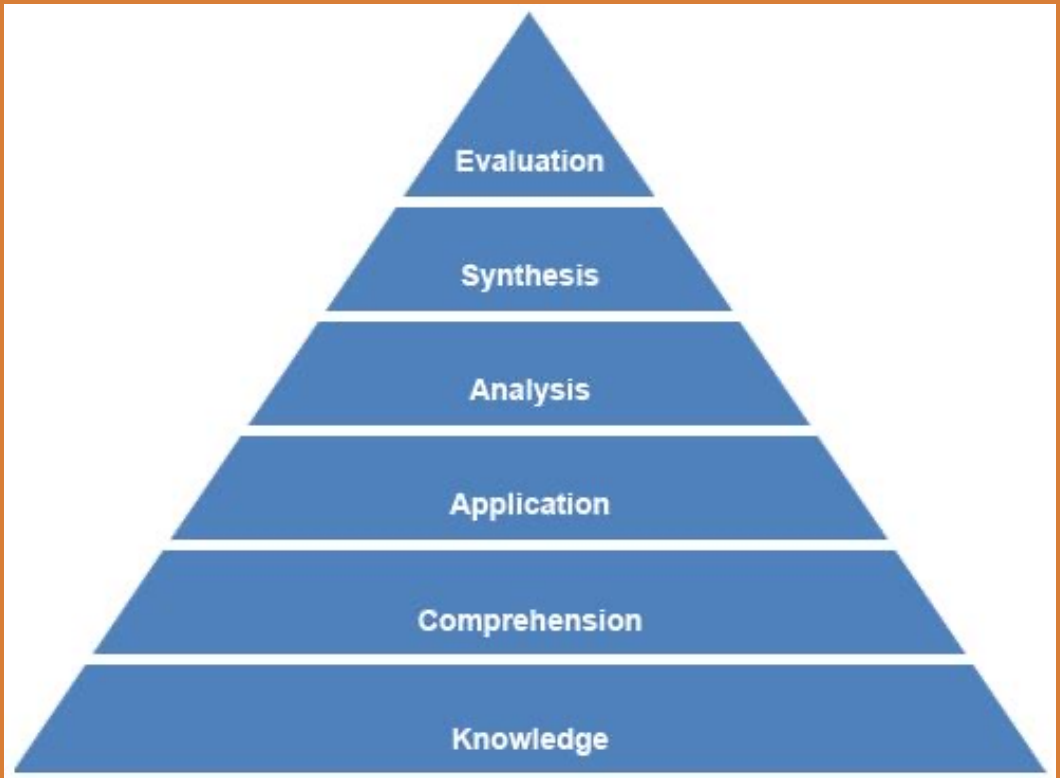


Image source: University of Central Florida Faculty Center

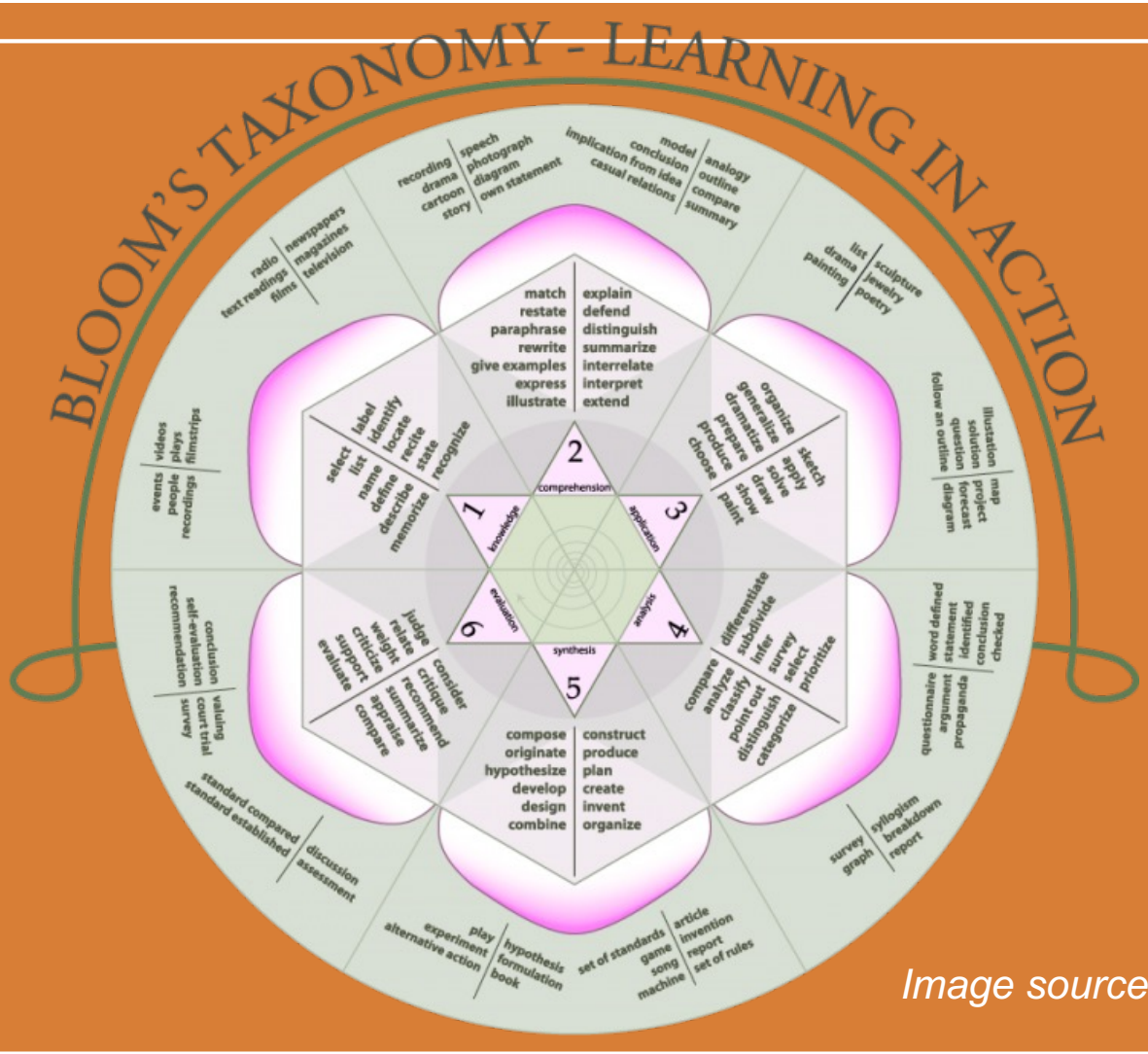


Image source: bloomstaxonomy.net

Lower order thinking skills

What would this look like in a literature review?

- Knowledge
- Comprehension
- Application

Cecile Badenhorst (n.d.). Literature Reviews: Moving from description to analysis, synthesis & evaluation. Memorial University School of Graduate Studies. https://youtu.be/aOYrZdnbxkk

Lower order thinking skills

What would this look like in a literature review?

Knowledge

FACTUAL — the elements of the concept, issue, problem,
definitions, general information etc.

CONCEPTUAL — trends , sequences, interrelations between
concepts, structures, theories

PROCEDURAL — processes, how to do something, steps
In techniques or skills

META COGNITIVE — understanding on how one thinks

Lower order thinking skills

What would this look like in a literature review?

Knowledge

- Writer presents information from the source text for the reader to understand and comprehend

- Ways of presenting knowledge: SUMMARIES, DEFINITIONS, TABLES, DIAGRAMS, DESCRIPTIVE TEXTS

Lower order thinking skills

What would this look like in a literature review?

Comprehension

- About translating, interpreting, extrapolating, determining meaning

- Knowledge needs to be mediated and explained to a reader:
  - explaining the relevance of a source text
  - interpreting he significance of the data in a table
  - proving an interpretation of a descriptive piece of writing

Lower order thinking skills

What would this look like in a literature review?

- **Comprehension**

- Transferring data from a source text into your own writing and explaining why
- Summaries, descriptions, paraphrasing, interpreting
- All what helps a reader to understand the information that you provided

Lower order thinking skills

What would this look like in a literature review?

Application

- About caring out a procedure or applying understanding

- In a Literature review APPLICATION means showing the reader how the knowledge is used or has been used over time

For example:

- Describe a concept (KNOWLEDGE)
- Explain why this concept is important for your study (COMPREHENSION)
- Show examples of where this concept has been used in different studies or contexts (APPLICATION)

Lower order thinking skills

What would this look like in a literature review?

Application

- About applying knowledge, demonstrating understanding constructing something from information

- It would be hard for a reader to understand if you provide examples (APPLICATION) before you provided description (KNOWLEDGE) —>

Raises a question about what are you trying to say?

Higher order thinking skills

What would this look like in a literature review?

- Analysis
- Synthesis
- Evaluation

Higher order thinking skills

What would this look like in a literature review?

Analysis

- Breaking a concept, data, issue into parts
- Examining the parts and the relationships between them
- Looking across source texts for information parts or relationships
- Comparing contrasting parts and relationships in source texts
- Grouping re-grouping and classifying (*looking across the literature, three key characteristics become clear…*)

Higher order thinking skills

What would this look like in a literature review?

Analysis

EXAMPLES

- Of a source text:

Park's (2024) study shows that three components are crucial…

- Across source texts:

Park's (2024) study has three components, Kim's (2023) study has five components…

+ organising and re-organising

+ draw conclusions

Higher order thinking skills

What would this look like in a literature review?

- **Synthesis**

- About taking the findings of the ANALYSIS and putting it all back together, but with insight after the analytical procedure
- In SYNTHESIS the whole is always bigger than the sum of the parts
- The issue will alway be bigger and deeper because of the insight gained during the analysis

Higher order thinking skills

What would this look like in a literature review?

Synthesis

- Combine
- Integrate
- Design
- Generalise
- Construct
- Create

Higher order thinking skills

What would this look like in a literature review?

Synthesis

Often involves making meta-conclusions

EXAMPLE

"Although the research literature shows that this concept has many characteristics, three characteristics appear in all of them. These characteristics are all shaped by economics…"

- develop abstract relations
- establish connections
- pull things together

Higher order thinking skills

What would this look like in a literature review?

Evaluation

- Is where we make judgement about ANALYSIS and SYNTHESIS

- In EVALUATION, we assess our own argument, defend it against possible objections, appraise the process of our own explanation of the literature, recommend and critique

- This is where you say: Now that I've done this study, what's missing, what's didn't work out well, what would I do differently if I could?

Higher order thinking skills

What would this look like in a literature review?

Evaluation

- Can use theoretical sense or academic judgement (logic and reason based on purpose, argument, and evidence provided)
- Can have a sections called “Limitations” or include evaluation in the discussion section of the Literature Review
- Don’t undermine your ANALYSIS and SYNTHESIS, but show scholars awareness of possible shortcomings
- Counter the possible objections from a resenting reader

Higher order thinking skills

What would this look like in a literature review?

Evaluation

- Happens in different places in Literature Review:

- you read and assess individual source texts (part of the ANALYSIS process)

- evaluating your overall review process

Literature Review

From description to analysis, synthesis, evaluation

Knowledge- comprehension- application

—> to

Analysis- synthesis- evaluation

Writing like this will give your readers information in a systematic, organised, understandable way

Literature Review

From description to analysis, synthesis, evaluation

Include:

-DESCRIPTIONS to provide your reader with KNOWLEDGE
-INTERPRETATIONS (make sense) so your reader can COMPREHEND
-EXAMPLES from source texts to show APPLICATION

ANALYSE by taking the topic apart, grouping and developing findings
SYNTHESISE by developing meta- conclusions
Finally bring your critical eye to bear when you EVALUATE

In a section of your paper

For example, section about one concept

- Unpack the concept by providing definitions, characteristics, etc.
- Interpret the definitions and characteristics
- Show examples from the research literature

- Group various definitions and characteristics (*“ Three main characteristics… two main debates…”*) and develop findings (*”Three key issues emerged…”*)

- Pull it all together and discuss across the source texts, develop meta-conclusions (*“What I can now say about this concept is…”*)

- Evaluate (*“The literature only focused on qualitative studies, so these conclusions…”*)

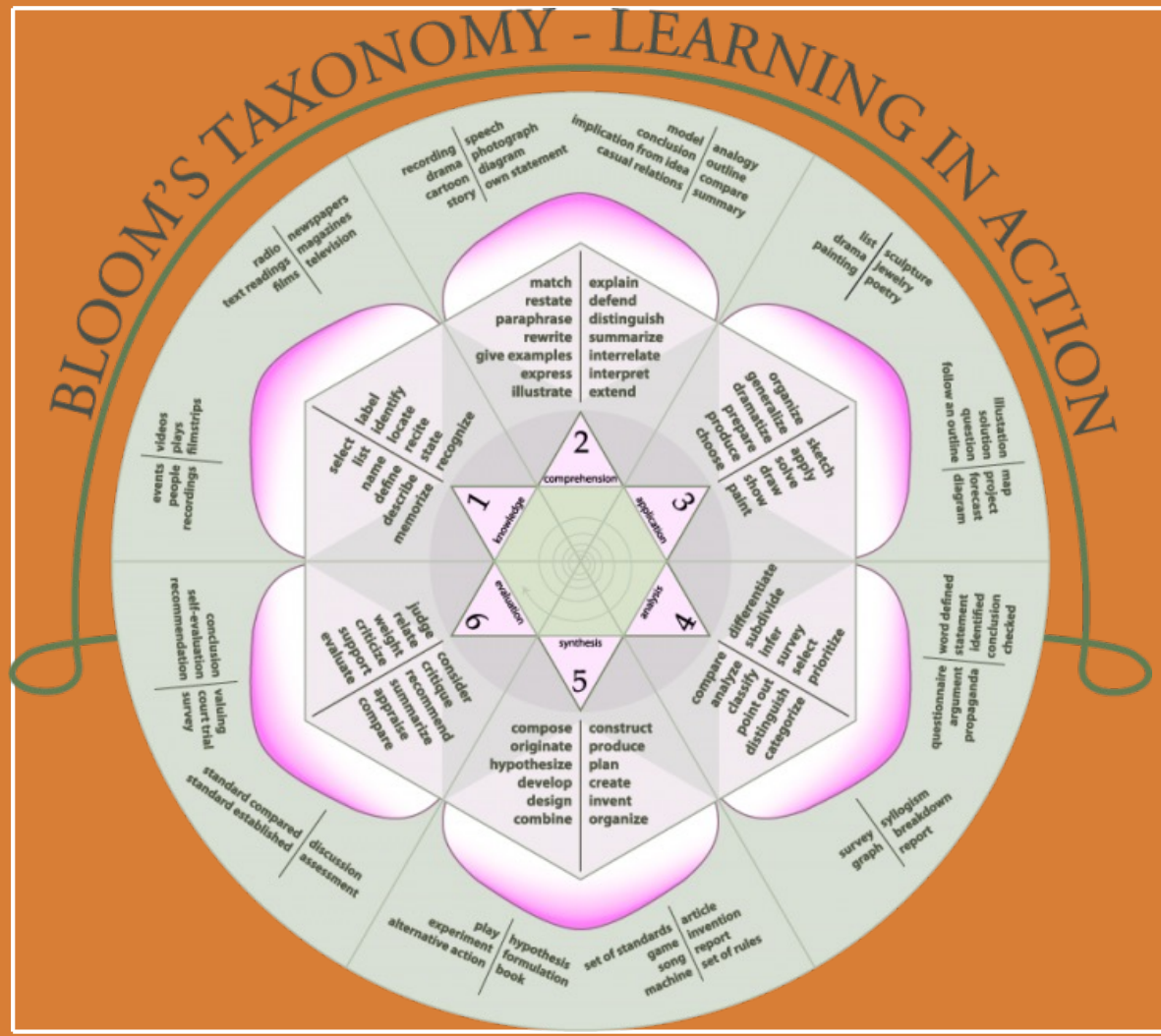
In a section of your paper

Apply this across the whole paper

- INTRODUCTION– Knowledge and Comprehension

- BODY OF REVIEW–Knowledge, Comprehension, Application, possibly Analysis

- FINDINGS OF REVIEW– Analysis, Synthesis
- DISCUSSION & CONCLUSION– Synthesis



+ New level to Bloom's Taxonomy: CREATE

CREATE is the highest thinking skill

Pulling things together to create a new and original whole requies sophisticated thinking

Image source: bloomstaxonomy.net

PART II
Analysis and synthesis of the source texts

Hart (2018) process for critically reading the source text

- Read Abstract
- Scan text noting research purpose and problem
- Read text again, highlight words *yet, thus , therefore, however* which indicate a shift and are linked to an argument
- Sum up the author's argument, if unclear, note what points the author is making and why
- Highlight interim and main conclusions and reasons for the conclusions (usually follow the words *therefore , thus, consequently, as a result of etc.)*
- Take each conclusion and evaluate the reasons for these conclusions (words for reasons : *because, since, it follows etc.)* **Are you convinced?**

Question both Claims and Conclusions for the argument

- The claims will contain assumptions: is the argument worthwhile to make in the first place? Is this an appropriate focus? Are there other questions we should be asking?
- The conclusions need to logically & reasonably follow from the claims & supported by evidence
- Leaps in reasoning: more claims than evidence

“bring together different studies… and to find new meaning from the sum of those papers viewed as a whole than could be obtained by reading each one individually”

Aveyard, 2010, p.124

Conclusions of the Literature review

- Conclusions on the individual sources using note taking
- Conclusions across source texts using analysis, synthesis and evaluation
- Meta conclusions: meta synthesis points that you can make now when you have done this review (develop three meta conclusions–> push yourself a bit further by asking
  "What three things I can say about this?"
  "What does it all means?"

Analysis and Synthesis

- Analysis- taking an idea, argument, or piece of research apart to see how it was constructed. Doing the same wit h multiple ideas, arguments, or pieces of research

- Synthesis- re-assembling the pieces of an idea(s), argument(s), or piece(s) of research in a different way to support new claims, proposals, and interpretations and proposals for research (Hart, 2018, p. 197)

Analysis

EXAMPLE

Analysis statement

Findings Section

The analysis revealed **two major trends** and **seven thematic areas of research focus**, providing a comprehensive understanding of the current state of ESD research.

First, the analysis indicates a notable increase in ESD research, especially since 2015, reflecting the growing academic interest in Japan aligned with global sustainable development initiatives.

Second, the analysis shows a significant emphasis on research within formal educational settings, suggesting a trend toward formalizing ESD or indicating a research gap in informal or continuous education settings.

Finally, analysis of the seven thematic areas shows that research on pedagogical approaches and material development predominates within the field, whereas inquiries into teacher training and school management aspects of ESD are less frequent.

Ohira, Y. (2024 in press). ***Beyond the classroom: The evolving spectrum of ESD research in Japan***. *International Journal of Comparative Education and Development.* ***Special Issue-*** *Problematizing development and EfS,* edited by T. Savelyeva and J. Liu

Synthesis

EXAMPLE

Synthesis statement

The general agreement in all papers which Ohira (2024) read

Discussion Section

There is a **general agreement** among the researchers that there has been a shift toward active, hands-on, and student-centered pedagogies to foster transformative learning experiences in ESD. This studies illuminate Japan's engagement with these global pedagogical trends, reflecting a growing interest in learner-centered strategies that aim to transcend traditional educational paradigm.

However, the persistent challenges in verifying the transformative impact of these strategies underscore the need for a nuanced understanding and further research, particularly in developing methods that can enact deep, sustainable changes within the educational system.

This aligns with global discussions emphasizing the need for empirical evidence of pedagogical effectiveness, suggesting that Japan's experience could offer valuable insights into the practical challenges of adopting innovative teaching methods in different cultural and institutional contexts

Ohira, Y. (2024 in press). ***Beyond the classroom: The evolving spectrum of ESD research in Japan***. *International Journal of Comparative Education and Development.* ***Special Issue-*** *Problematizing development and EfS,* edited by T. Savelyeva and J. Liu

Analysis Questions for individual texts, groups of texts, entire pool of texts you read

- In what ways researchers addressed the concept, topic, issue?
- What conclusions have researchers drawn about the concept topic issue?
- What do we know and not know about the concept topic issue?

Onwuenguzie & Frels (2016)

Synthesis Questions for individual texts, groups of texts, entire pool of texts you read

- What agreement/ disagreement is there in the research literature?
- What issues are contentious / controversial?
- Are there issues / concepts not considered int eh research literature?

Summarizing a source text and connecting

Made it several times

EXAMPLE

What study was about

In another study (Chen et al., 2024), a group of international researchers from Taipei and Japan aimed at investigating effects of the institutional international policies on higher education internationalization. They surveyed 3,158 university researchers and **came to a conclusion** that clear internationalization strategies and financial support for the researchers' overseas studies significantly influence internationalization in the teaching-oriented and research-oriented higher education institutions in Taipei and Japan respectively. Du et al. (2024) **reported the similar findings**.

Savelyeva, T. & Jing, L. (2024 in press). Editorial Introduction: Special Issue- Problematizing development and EfS. *International Journal of Comparative Education and Development.*

Synthesis: Comparing and contrasting

2 differences in approaching the particular topic

EXAMPLE

Identify and describe these approaches by comparing n contrasting

There are **two basic premises** that characterise the studies in this group. The **first premise** claims that practical interlinking between educational psychology and instruction provides evidence of success from real projects and cases.

The proponents of this assumption base their claims on studies that explain variations of student performance (Coutinho and Neuman, 2008; Sarfo and Elen, 2007; Fraser and Lee, 2009); design instructional models (Savelyeva, 2011; van Merrie¨nbour 1997); and evaluate learning environments in the classrooms (Biggs, 1987; Fraser et al. 1982; Moos and Trickett 1974)

The second premise claims that…

Adapted from Savelyeva, T. (2012). Connecting instructional and cognitive aspects of an LE: A study of the global seminar project . *Learning Environ Res,* 15:65–79. DOI 10.1007/s10984-012-9099-1

Describing a concept

- can be quite complex, it is not as simple as a dictionary definition
- describe the range of definitions or understandings about this concept
- eventually come to what is the most useful concept for your study

Describing a concept

EXAMPLE

Synthesis statement

The article examines connections between the discourses of sustainability and peace education (PE). The way we think of PE is ecological in nature. Rooted in the fundamental 'question of relationship' between ourselves, others, and Nature, the ecological dimensions of **PE differentiate the present study** from the previous research by expanding its inquiries along the axes of this question. The ecological dimension of PE includes discourses which help frame and structure different ways of thinking about, articulating, describing, and interpreting the complexity of human relationships, as well as surrounding social and natural environments

Adapted from Savelyeva, T. (2018). Peace education in Anthropocene In M. A. Peters (Ed.), *Encyclopedia of Educational Philosophy and Theory* (1-5). New York: Springer. DOI: 10.1007/978-981-287-532-7_593-1

Synthesis of sources : Reading across sources

Conclusion- no commonalities among studies in this group

EXAMPLE

Can make synthesis statement despite uncertainties in the literature

The findings among the 'instructional' category are not unequivocal. Rather, the instructional programs differ in many aspects- their design, duration, frequency, and the content they offer. These programs have **no common denominator** that enables us to reach a firm conclusion regarding the relationship between instructional and cognitive domains of the Learning Environment (LE). Furthermore, the reporting in these papers revolves around the technological aspects of the LE which is one part of the LE, but not the only part. The literature is lacking cognitive, social, and affective claims that could be made…

Showing connections between different source texts

1 line from the particular source is extended to a number of sources; connection to a synthesis of other sources

EXAMPLE

… one such variable might be student's cultural background, which is a strong predictor of participation in sustainability-related activities (Savelyeva, 2019), and therefore **it is not surprising** that the results of the reviewed studies are not uniformed.

Critical conclusion

These results are in line with Park's (2024) claims about importance of formal sustainability education at any level of the educational system

Analytical connection to an individual study to make a synthesis statement

Noting weaknesses or limitations in sourse texts

Making commentaries --not critiquing!-- based on your experience & being a practitioner in the field + caution in the language → quite soft

… although the body of research concerning the integrating relationship between university's professional development (PD) and sustainability is still limited in scope, the direct and immediate associations are **promising** about **such relationships** and warrant further research.

Critical comment

Focus of studies does not give enough info

The main difficulty with these studies is that **there are no data** on the exact content of PD and sustainability-related courses, or on the way they were taught in different countries. The reason behind the findings reman **largely unknown**, and they may have nothing to do with the pros and cons of PD, but instead may relate to other factors, such as…

The current research has not been able to **comprehensively pinpoint** what PD types may uplift sustainability mindset (Savelyeva and Liu, 2024; Savelyeva and Park, 2023)

Sets of Conclusions

Conclusion to each section

Conclusions to findings
-core of the paper!
draw on your analysis

Conclusions to lit review
-meta conclusions

Writing up conclusions: Creating new meaning

Tell what authors thought about the studies and their process of analysis, came to synthesis statements, and conclusions

Conclusion to each section

although the body of research concerning the integrating relationship between university's professional development (PD) and sustainability is still limited in scope, the direct and immediate associations are **promising** about **such relationships** and warrant further research.

Conclusions to lit review -meta conclusions

Our classification of the reviewed studies into three categories—the 'political' category, the 'interventionist' category and the 'integrative' category—enables us to reach a number of conclusions. The studies we reviewed in the 'political' category show that PE classes do not hinder schoolchildren's AAs. The studies included in the 'interventionist' category focused on a number of variables, such as the length of the physical activity, the intensity of the physical activity and the strengthening of children's physical fitness, which are only a few of the possibilities to consider when attempting to determine the link between PE and AAs. The studies in the 'integrative' category suggest that if we want that PE will positively influence academic, then PE and academic instruction should be integrated and significant changes in both the curriculum and the school system are needed.

Our results are in line with the conclusion presented by others (e.g. Bailey et al., 2009; Brown & Penney, 2013; Rink & Mitchell, 2002; Thorburn, 2007) that it might be beneficial to

Adopted from Sima Zach, Ella Shoval & Ronnie Lidor (2017) Physical education and academic achievement—literature review 1997–2015, Journal of Curriculum Studies, 49:5, 703-721, DOI: 10.1080/00220272.2016.1234649

An important way to make sense of the source texts for your reader

Conclusions to lit review -meta conclusions

- Tell the reader what you did
- Present findings and draw conclusions
- Reenforce what you think and what others think too
- Show that it is really important and supported by the literature

Litarature Review

Problem
Broad topic to narrow research focus

Critical analysis
of literature on problem
+ synthesis

Synthesis
Conclusions of review re problem
+ meta conclusions in relation to broad topic

Adapted from Cecile Badenhorst (n.d).*Literature review: Critically analyzing and drawing conclusions.* *https://www.youtube.com/watch?v=gHMathpk9Qs*

PART III
Creating an Annotated Bibliography

Source: Cecile Badenhorst (n.d.) *Creating an Annotated Bibliography.* Memorial University School of Graduate Studies

Annotated Bibliography

- What is Annot. Bib. ?
- How to do one?
- Why should I write one? Who cares?

Annotated Bibliography- What is?

Literature Review is a complex Paper or Chapter to write

- A stepping stone between reading and writing
- Making the process manageable- creates a breathing space for you to gather thought before writing a paper
- Here's where you work out the relevance and quality of your sources
- Helps you move from summarizing & understanding to analysing and synthesis

Annotated Bibliography- Components

1. The full reference
2. Notes on content from source text (the .doc you are reading)
3. Interpretive or evaluative comments

Annotated Bibliography- How to write?

- Specific format
- You can tailor make it to your needs
- Add in what you think you'll need from the source text of your paper

1. Full Reference of Citation

HARVARD REFERENCING STYLE

Shi, L, Fazel, I, & Kowkabi, N 2018, 'Paraphrasing to transform knowledge in advanced graduate student writing', *English for Specific Purposes*, Vol 51, pp. 31-44.

Format in hanging indent-
top line indented, but others not

Makes in easier to read

Use MCWord for Hanging indent

Annotated Bibliography- How to write?

Formatting for several annotated bibliography entries

Citation in full formatted as a hanging indent and in alphabetical order.
Notes on the content of the source document.
Interpretive and evaluative comments.

Citation in full formatted as a hanging indent and in alphabetical order.
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Citation in full formatted as a hanging indent and in alphabetical order.
Notes on the content of the source document.
Interpretive and evaluative comments.

2. Notes on the content of the source document

Summaries of texts you read

- What you take depends on your purpose
- Notes documenting only what is in the source text, not your interpretations or thoughts
- Generally this involves summarizing the paper

Structure of Research Papers

Sometimes provides an overview summary

- Abstract
- Introduction
- Background/ Conceptual Framework/ Literature Review
- Methodology
- Results
- Discussions and Conclusions

Writing a sentence or two about each section will provide you with an overview summary

What to include in the summary

- Begin : *This paper is about*
- Include the researched problem and author's purpose of writing
- Describe methodology and key findings
- What conclusions do the authors draw?
- Points of Interest in the Literature Review
- Any theoretical ideas of interest to your project?
- Quotes-verbatim, quotation marks, page numbers

What to include in the summary: Example

This paper is about the challenges of paraphrasing for graduate students in their writing. Paraphrasing is defined as "recontextualizing source information in one's own writing with a credit to the original author" (p.31).

The authors argue that it is through paraphrasing that one can see how writers mediate source texts and integrate not only others' voices but their own voices in their writing.

The purpose of the research is to explore the complexity of paraphrasing even among advanced writers.

The researchers collected 192 paraphrases from 18 Master's and PhD students in their academic phases. They also collected reflections on paraphrasing from these participants.

What to include in the summary: Example

The purpose of this study was to show that paraphrasing as "an instance of knowledge transformation as writers present their own interpretations and evaluations of the source text" p. 33).

Their findings show that their participant's paraphrases ranged along a continuum from copying verbatim to restructuring the source text.

They conclude that paraphrasing is more than faithfully repeating the source text and that paraphrasing can be "stamped with one's authorial intention and interwoven with one's own opinion" (p. 42).

They recommend that students be explicitly taught how to paraphrase. The researchers are Canadian based academics.

REMINDER
Keep summary separate from interpretation

So you do not unintentionally plagiarize ;)

3. Interpretive and evaluative comments

your thoughts, your take on the paper, your interpretation

- Your interpretation
- Your critical assessment of the research in the source text
- How you will use in in your review/ paper

3. Interpretive and evaluative comments: 5 Questions or

Select those questions which are relevant to you

1. What type of source text is it? Peer reviewed?
2. What is the author's academic or intellectual credentials?
3. What evidence has the author provided for the claims being made?
4. Am I convinced by the argument being made? Why?
5. Any shortcomings?
6. Is the author making any assumptions?
7. Is the author positioned theoretically (if relevant)

3. Interpretive and evaluative comments: 5 Questions or

Select those questions which are relevant to you

8. How is this research relevant to my study
9. What evidence can I use from this study?
10. Will this study support my argument or provide a counterargument?
11. Can this text help me to unpack the core concepts of my study?
12. What is the significance of this source for my own paper?
13. What ideas related to my paper has this paper generated? Are there any sources in the reference list , relevant to my study?

3. Interpretive and evaluative comments: 5 Questions or

Previous questions:
Analysis and Evaluation

- What connections can I make to other readings?

This question:
Synthesis

EXAMPLE

Select those questions which are relevant to you

Since my topic is about the connection between reading and writing, this paper will be very useful to explain the complexity involved. Student writers are always told to paraphrase (and reference the paraphrase) to avoid plagiarism but this paper shows: 1) paraphrasing is challenging no matter what level; 2) paraphrasing is not just about repeating the source text, it involves repurposing the source text; 3) writers can promote their argument through paraphrasing. I like their definition and I may use it in my paper. I can use this paper to provide evidence for my argument about the complexity of transferring reading into writing, and how reading can be transformed into new knowledge in writing. This is a thorough study with a well-developed methodology and analytical process.

Writing an Annotated Bibliography

Useful Notes:

- Citations appear in alphabetical order.
- Full citation followed by the annotation.
- Hanging indent for first line of each citation.
- Start the annotation on a new line, but keep it indented within the margins of the citation.
- Use the third person – do not use "I." (Except in the interpretive comments to yourself).
- Use the present tense, such as, "the authors suggest…", "the findings show…"

Writing an Annotated Bibliography

WHO CARES?

- An AB will help you become a better researcher/writer and writing the paper becomes easier.
- Use AB to build critical thinking in your paper by critiquing the individual source texts.
- Use AB to check if you have enough sources, if the sources are relevant, and you can work out how you will use them in your paper.

Writing an Annotated Bibliography

WHO CARES?

- You will be able to synthesize ideas by noting patterns across the annotations which you could develop into themes and or an argument.
- You will be able to plan your paper and develop an outline based on the themes and/or argument.
- You will have prepared detailed notes, quotes and thoughts so that when you write the paper, the process is less challenging.

Writing an Annotated Bibliography

WHAT DID WE LEARN?

- AB has 3 components: A citation, a summary of the study, an interpretation or evaluation of the paper.
- Helps the writer transfer knowledge and information from source texts into their own writing.
- Helps the writer synthesize content from source documents.

Writing an Annotated Bibliography

WHAT DID WE LEARN?

- Helps the writer build critical thinking about source texts.
- Helps the writer organise and plan for writing the paper.

- **Especially useful for a long-term project**

Scientific research is about a mindset,
and here we are making it grow

Tamara Savelyeva

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Tamara Savelyeva
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