



# ON LITERATURE REVIEW FOR SCIENTIFIC RESEARCH

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# Motivation and Objectives

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- ❖ Ideas are not formed in vacuum.
- ❖ Identifying Gaps in existing literature and placing the idea and subsequent research into perspective
- ❖ Appraisal and criticism of existing knowledge-base of the field; knowing trends
- ❖ The larger picture





# What Is and Isn't Scientific Literature?

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- Peer reviewed communication
- Published proceedings
- Authentic books and periodicals
- Common knowledge  
i.e., well summarized in Wikipedia etc.
- Easy to find  
Googling.
- Available freely online (notes and monologues)



# Good and Not So Good Reviews

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- Critical appraisal
- Clear and concise in presentation
- Chronological (topic/approach-wise synthesis may be considered with chronology followed for each of them)
- Consistency of approach in handling theoretical and experimental methodologies.
- A mere listing; drab collection of work done
- Appraise authors using their words
- Shallow and arbitrary
- Meandering while missing the points of central importance

# When a literature Review is Necessary?

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- ❖ Introduction to thesis, dissertation
- ❖ Introduction to research papers.
- ❖ Review articles
- ❖ Industry reports
- ❖ Course assignments



# Digging Into the Literature

■ Seminal papers

A

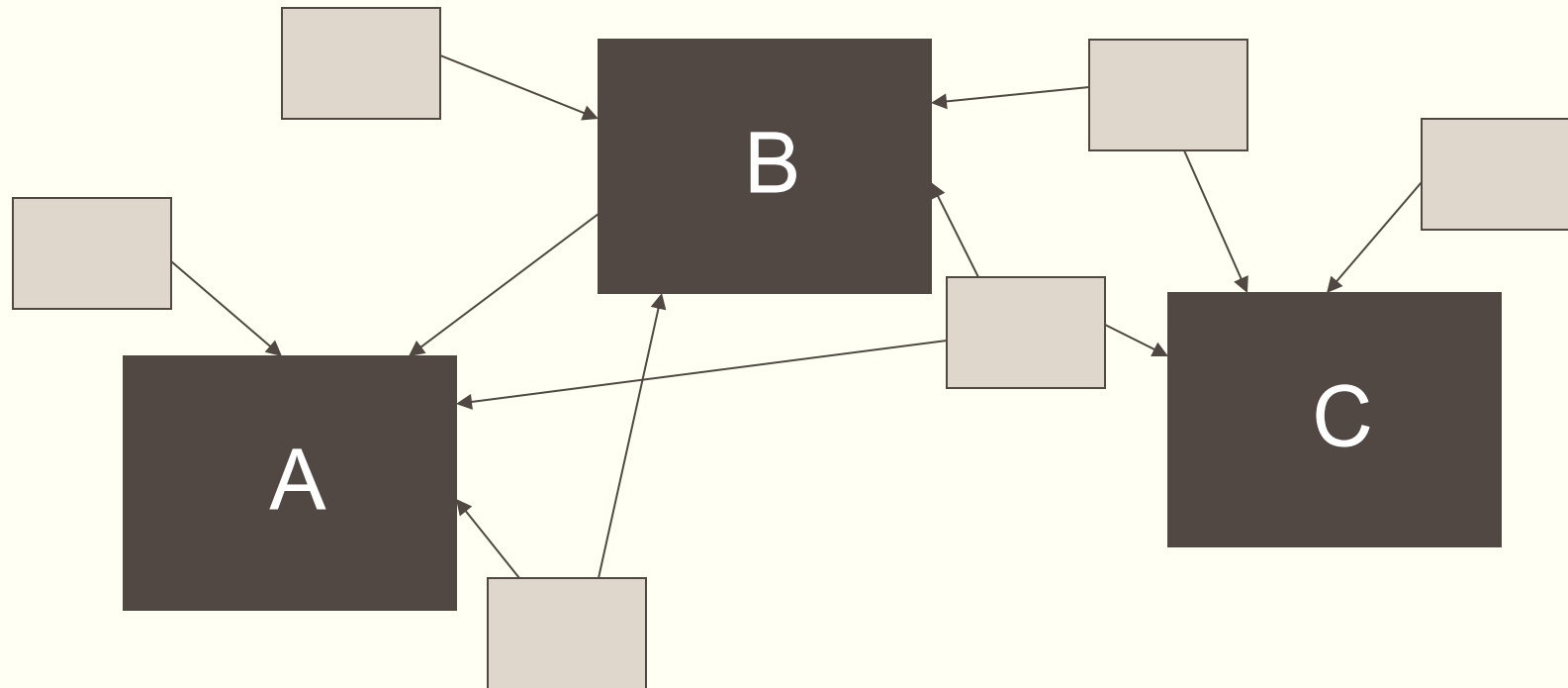
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# Digging Into the Literature cont....

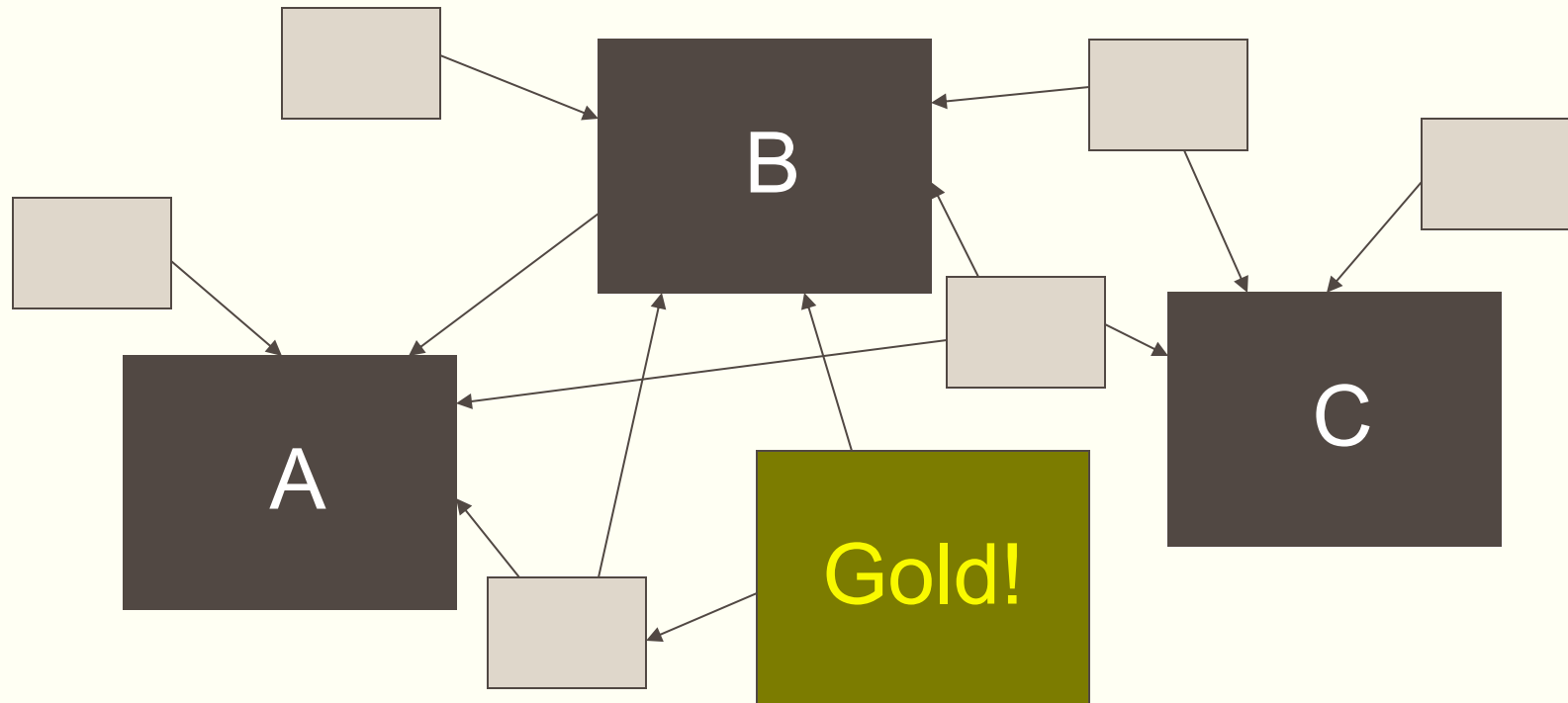
■ Seminal papers

■ Studies based on seminal papers



# Eureka!

- Seminal papers
- Studies based on seminal papers





# Gathering Contents for Review

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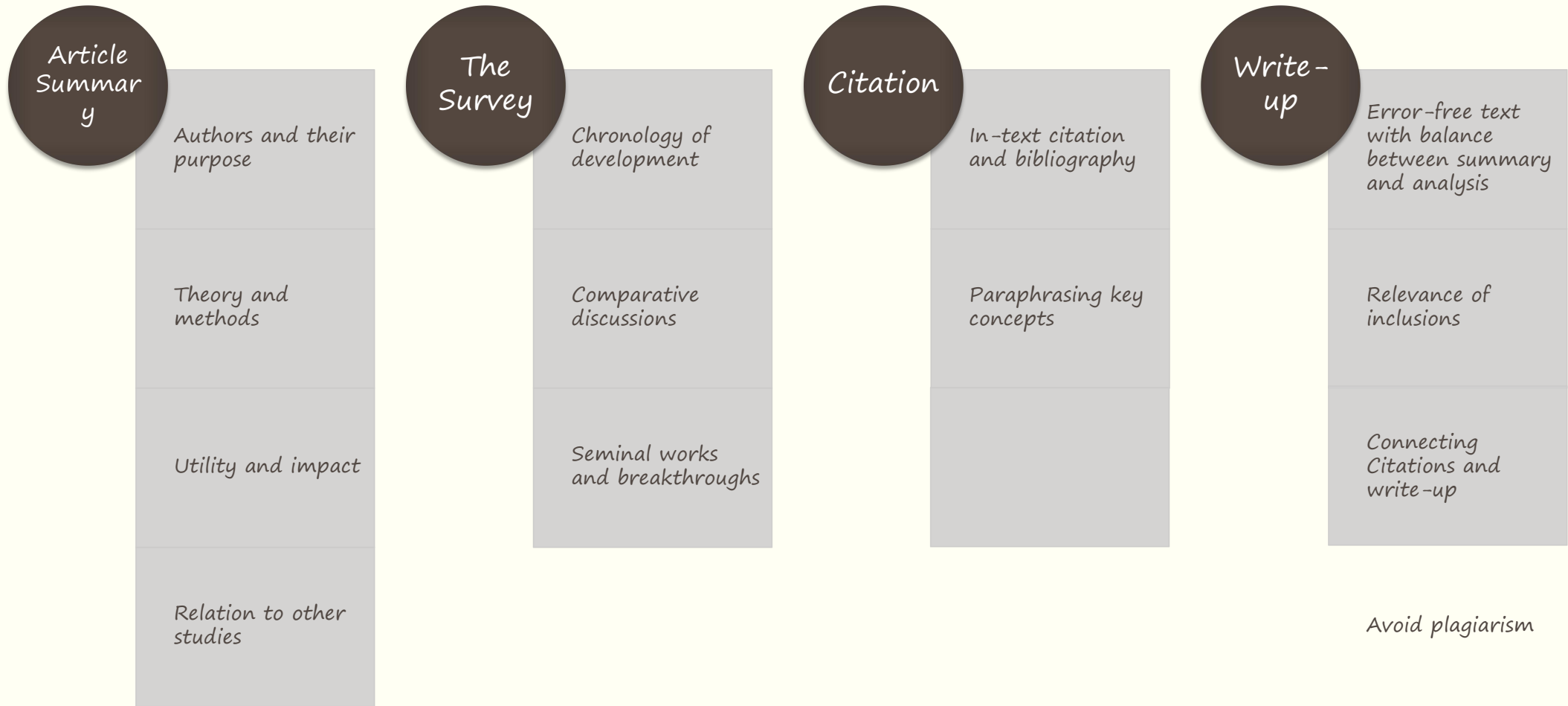
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- Read abstract, conclusion, and important segments of introduction to decide whether to keep in the bucket.
- Special emphasis on conclusion to look for further possibilities
- Go through the cited articles as much as possible.
- Getting stuck with the theory used.

# Literature Review in a Nutshell

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# More on Citations and Writing Review Articles

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- Do not accept claims at a face value.
- Use quotations as sparingly as possible.
- Do not be too eloquent or harsh in your expressions.
- Logic of listing
- When deciding whether to refer a paper or not, benefit of doubt goes to the paper.
- Be consistent in your claims; highlight inconsistencies in others' claims
- Have your images and plots; cite appropriately otherwise.
- Technique; novelty; impact

# Summary Table

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- Useful for both the author and the reader
- Such a table provides a quick overview that allows the reviewer to make sense of a large mass of information.
- The tables could may include columns
  - Author
  - Type of study
  - Sample
  - Design
  - Data collection approach
  - Key findings

# Sources of Articles

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- Literature databases

- Web of science
- Scopus
- Google scholar
- ResearchGate
- JSTOR, arXiv etc.

- Journals and proceedings

- IEEE/ASME/ACM and such society bulletins and conference proceedings
- Elsevier
- Springer
- Taylor and Francis
- Wiley, SAGE etc.

# Digital Object Identifier (DOI)

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- Quickest way to find an article on web - DOI
- Unique identifier to every published document - academic, professional, governmental
- URL may change, but not its DOI

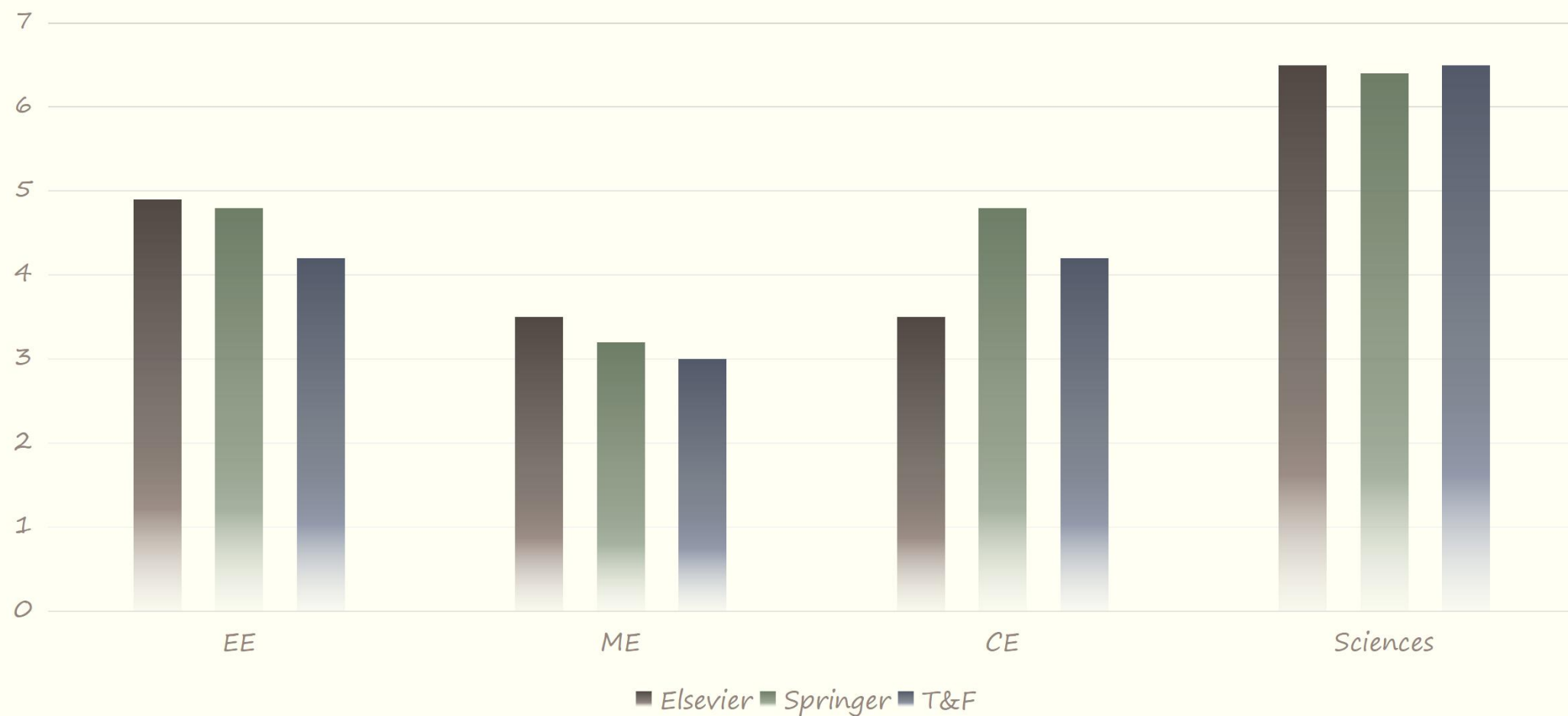
# Journal Metric

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- Impact factor
- Long term impact factors
- Speed of publication
- Impact factor obsession (?!)

# Citation Metric for the Last Decade for Selected Publishers



Source:  
[BioxBio.com/journal\\_citations](https://bioxbio.com/journal_citations)



# Is Impact Factor a Perfect Journal Metric?

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# Article Access

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- Open access
- Subscription
- Archives
- Open hosts
- Scopus
- Google Scholar
- ResearchGate
- ISI Web of Knowledge

# Common Mistakes Made in Literature Review

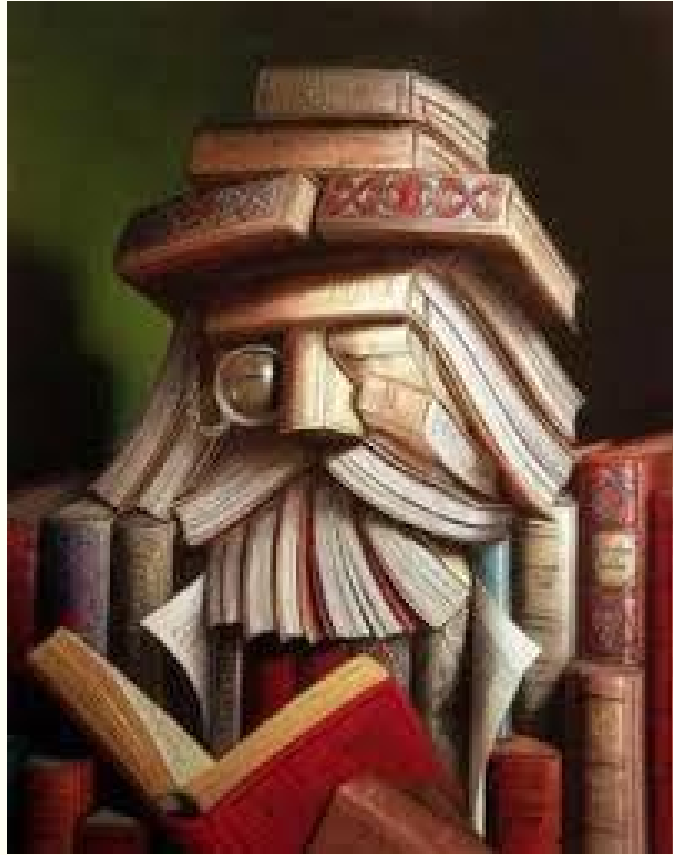
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- Review isn't logically organized
- Review isn't focused on most important facets of the study
- Review doesn't relate literature to the study
- Too few references or outdated references cited
- Review isn't written in author's own words
- Review reads like a series of disjointed summaries
- Review doesn't argue a point
- Recent references are omitted

Thank You!

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*image source: booksandimages*