Literature Review

CS 318 – Methods of Research

Session Outline

- What is a Literature Review?
- Why conduct a Literature Review?
- Stages of the Literature Review Process
  - Searching for Literature
  - Screening the Literature
  - Processing the Literature
  - Writing the Review
- References and Citations

What is Literature Review?

- **According to Fink (2005),**

  "…a systematic, explicit, and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners."

What is Literature Review?

- **Literature Reviews include (Okoli & Schabram, 2010)**
  - Providing a *theoretical background* for subsequent research;
  - Learning the *breadth of research* on a topic of interest; or
  - Answering *practical questions* by understanding what existing research has to say on the matter.

What is Literature Review?

- **According to Hart (1998)**

  "Quality means appropriate breadth and depth, rigor and consistency, clarity and brevity, and effective analysis and synthesis; in other words, the use of ideas in the literature to justify the particular approach to the topic, the selection of methods, and demonstration that this research contributes something new."

What is Literature Review?

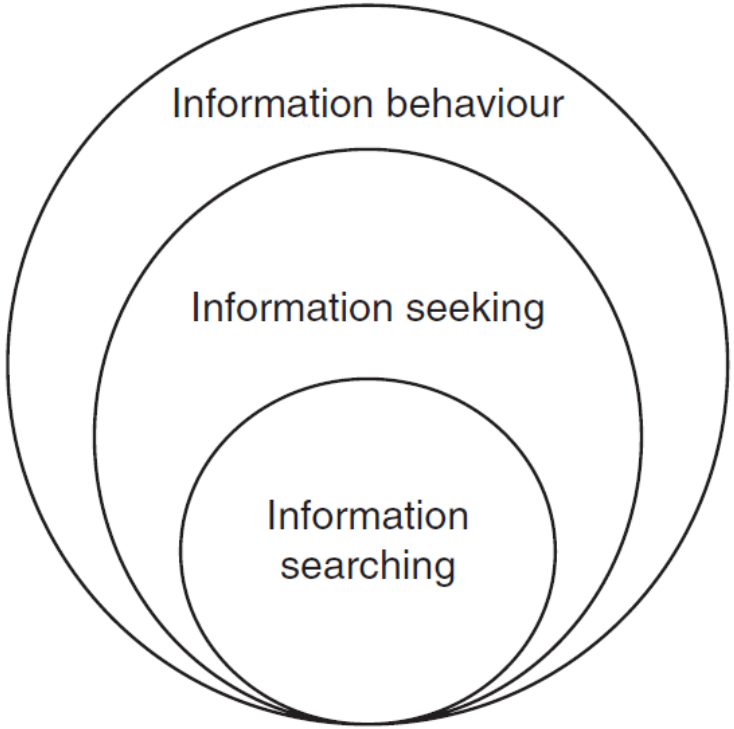
- **An effective literature review should include the following characteristics** (Levy & Ellis, 2006)
  - Methodologically *analyze and synthesize quality literature*
  - Provide a *firm foundation to a research topic*
  - Provide a firm foundation on the selection of research methodology
  - Demonstrate that *the proposed research contributes something new* to the overall body of knowledge.

Why Conduct a Literature Review?

- **Thus, the following are the goals of a literature review:** (Levy & Ellis, 2006)
  1. Understand the existing Body of Knowledge including where excess research exists and where new research is needed
  2. Provide a solid theoretical foundation for the proposed study
  3. Substantiate the presence of the research problem
  4. Justify the proposed study as a possible contribution to the BoK
  5. Frame the valid research methodologies, approaches, goals and research questions

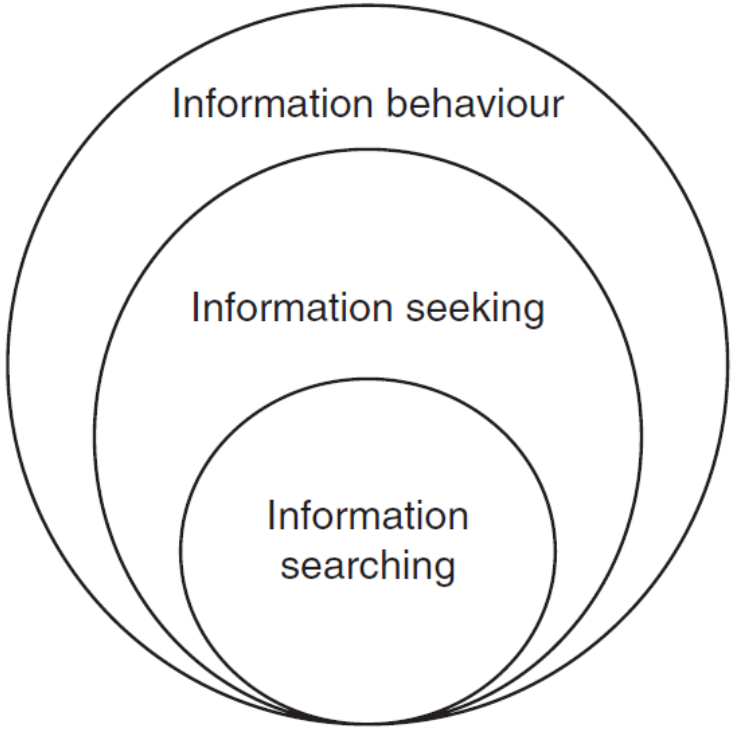
Stages of the Literature Review Process

- Information Seeking
  - One can conceptualize information-related practices as consisting of three layers:
    - Information searching
    - Information seeking
    - Information behaviour



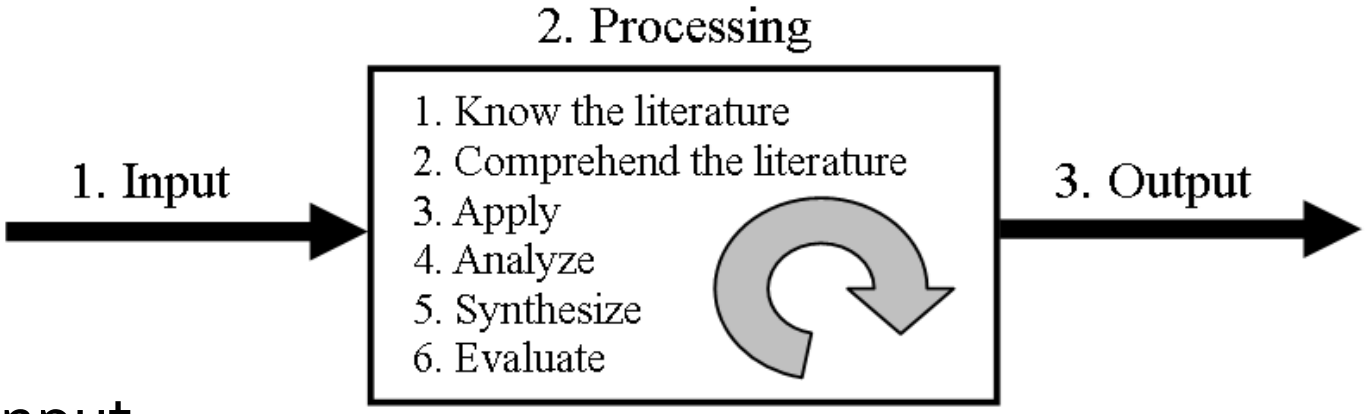
Stages of the Literature Review Process

- Information Seeking
  - The three layers roughly refer to the following activities:
    - Searching
    - Investigation
    - Documentation



Stages of the Literature Review Process

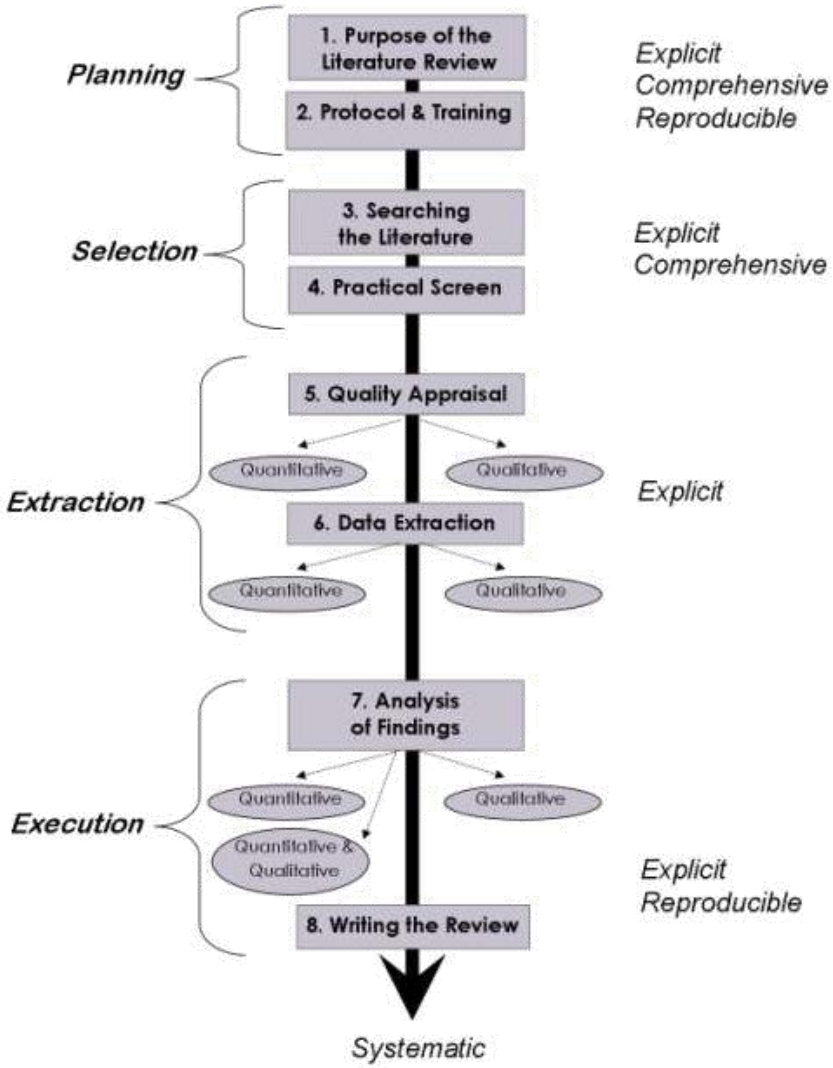
- The three steps of the literature review process: (Levy & Ellis, 2006)



1. Input
2. Processing
3. Output

Stages of the Literature Review Process

- An Eight-Step Guide to Conducting a Systematic Literature Review (Okoli & Schabram, 2010)
  1. Purpose of the Literature Review
  2. Protocol and Training
  3. Searching for the Literature
  4. Practical Screen
  5. Quality Appraisal
  6. Data Extraction
  7. Synthesis of Studies
  8. Writing the Review



Searching for Literature

- Validating the Quality of Literature (Levy & Ellis, 2006)
  - Look for peer-reviewed published work
  - Care should be taken in using any work that is not peer-reviewed or practitioner-oriented
  - Use of such sources should be minimal and restricted to factual information
  - Quality CS research literature from leading, peer-reviewed journals should serve as the major base

Searching for Literature

- Publishers' Databases (Hustadt, 2009)
  - **ACM Digital Library** - Full-text of all ACM journals and conference proceedings http://portal.acm.org.ezproxy.liv.ac.uk/dl.cfm
  - **IEEE Xplore** - Full-text of IEEE journals, conference proceedings, and books http://ieeexplore.ieee.org.ezproxy.liv.ac.uk/
  - **ScienceDirect** - Full-text of Elsevier journals http://www.sciencedirect.com.ezproxy.liv.ac.uk

Searching for Literature

- Publishers' Databases (Hustadt, 2009)
  - **SpringerLink** - Full-text of Springer journals, conference proceedings, and books http://www.springerlink.com.ezproxy.liv.ac.uk/
  - **Wiley InterScience** - Full-text of Wiley journals and books http://www.interscience.wiley.com.ezproxy.liv.ac.uk/

Searching for Literature

- Freely available scholarly web search engines (Hustadt, 2009)
  - **CiteSeer**- Digital library of 750k freely available papers in computer and information science http://citeseer.ist.psu.edu
  - **Google Scholar** - Searches scholarly literature on the web. http://scholar.google.com
  - **Scirus** - Searches journals (ScienceDirect) and web resources http://www.scirus.com/
  - **Windows Live Search Academic** - Academic search engine - search academic journals and content for article titles, author names, article abstracts, and conference proceedings. http://academic.live.com/

Searching for Literature

- *Conference proceedings*
  - Is also a good resource but examine only those with a reputation for quality
  - Proceedings from for-profit conferences that are run by dubious organizations may be peer-reviewed
  - Limit to those referenced in quality CS journals

Searching for Literature

- Using the Internet for Research
  - It is important that you evaluate the quality and usefulness of Web Sites before using them
  - Assess them based on the following factors:
    - Authority
    - Purpose
    - Accuracy
    - Relevance
    - Organization
    - Stability

Searching for Literature

- Some questions that you need to think about before you start the search. (Hustadt, 2009)
  - What are you trying to find out?
    - Try to specify exactly what you need to know
  - What type of information do you want to find?
    - An answer to a specific question?
    - An overview of a subject area?
    - A specific document?

Searching for Literature

- *What are you trying to find out?*
  - ***Problem***
    - Is the problem I have in mind already defined? If yes, how do researchers call the problem?
    - How was it defined in the literature?
    - Is my problem similar to their definition? If yes, how similar are they?
  - ***Approaches***
    - How did the researchers solve the problem?
    - What approaches did they used?
    - Which approach(es) appear(s) to gain the most favourable results?

Searching for Literature

- *What are you trying to find out?*
  - ***Methodology***
    - How did the researchers use the approach?
    - What were the exact steps they underwent to solve the problem?

Searching for Literature

- *What type of information do you want to find?*
  - ***Problem***
    - Name of the problem
    - Existing definitions of the problem
    - Differences in the definitions of the problem
    - Similarities of the existing definitions to my problem
  - ***Approaches***
    - Methods or approaches used in the literature
    - Comparison of these methods in the literature
  - ***Methodology***
    - Theoretical framework

Searching for Literature

- Keywords Search
  - The querying of quality scholarly databases by the use of a specific word or phrase
  - The use of technology-specific terms may add difficulty
  - The ACM Classification System and MIS Quarterly Roadmap offer a good starting point
  - If the mode is wide, try alternative words/phrases, alternate spellings or wildcards

Searching for Literature

- ***Backward Search***
  - The process can be divided into 3 specific sub-steps:
    - *Backward references search* refers to reviewing the references of articles yielded from the keyword search
    - *Backward authors search* refers to reviewing what the authors have published prior to the article
    - *Previously used keywords* refers to reviewing the keywords noted in the articles yielded from the keyword search

Searching for Literature

- ***Forward Search***
  - Similarly, it can be divided into 2 specific sub-steps:
    - *Forward references search* refers to reviewing the additional articles that cited the article
    - *Forward authors search* refers to reviewing what the authors have published following the article

Searching for Literature

- ***Quick Exercise***

  Suppose you are interested in studying the literature on the distribution of relief goods to disaster areas.

  Initially, you want to find out whether there is a manner by which the distribution can be optimized and if such a problem has already been studied in the literature.

  - So, was the problem already studied?
  - What were the problems related to this in the literature?
  - Which among these is the most appropriate to the one described?

Searching for Literature

- When is the Literature Search Finally Done?
  - When one discovers that new articles only introduce familiar arguments, methodologies, findings, authors and studies
  - When no new citations are discovered and articles in newly discovered literature have already been reviewed

Screening the Literature

- **Practical Screen** (Okoli & Schabram, 2010)
  - Involves deciding which studies should even be considered for review
  - Weed out articles, not based on their quality but rather based on 2 categories of practical criteria:
    - According to whether the study's content is applicable to the research question
    - According to explicitly defined criteria chosen
  - The reviewer normally reads no more than the abstract

Screening the Literature

- Criteria for the Practical Screen
  - Fink (2005) lists several criteria upon which studies can be excluded from consideration:
    - Content (topics or variables)
    - Journals
    - Authors
    - Settings
    - Participants or subjects
    - Program or intervention
    - Research design or sampling methodology
    - Date of publication

Processing the Literature

- Reading the Literature
  - Preferably you should also keep a record of the answers to some or all of the following questions: (Hustadt, 2009)
    - What is the main topic of the article?
    - What was/were the main issue(s) the author said they want to discuss?
    - Why did the author claim it was important?
    - How does the work build on other's work, in the author's opinion?

Processing the Literature

- Reading the Literature
  - Preferably you should also keep a record of the answers to some or all of the following questions: (Hustadt, 2009)
    - What simplifying assumptions does the author claim to be making?
    - What did the author do?
    - How did the author claim they were going to evaluate their work and compare it to others?
    - What did the author say were the limitations of their research?
    - What did the author say were the important directions for future research?

Processing the Literature

- Reading the Literature
  - **Phase 1** - *Clarify the Problem*
    - Discover different aspects of the problem
    - Investigate such aspects in terms of their relevance to the current problem
    - This is important particularly when the problem is put in a local setting

Processing the Literature

- Reading the Literature
  - **Phase 1** – *Survey the Solution Approaches*
    - These can be deduced from the works that
      - Investigated and solved a localized instance of the ***problem***
      - Investigated the general definition of the ***problem*** and surveyed the solution ***approaches***
    - Assess the approaches based on confirmed effectiveness and appropriateness to the current study

Processing the Literature

- Reading the Literature
  - **Phase 2** – *Survey the Methodologies in the Chosen Solution Approach* (1/2)
    - Evaluate the works that investigated and solved the ***problem*** using the chosen approach
    - Find out how the proponents used the approach (***methodologies***)
    - Assess these ***methodologies*** in terms of their relevance to the present state of the technology and their appropriateness to the study

Processing the Literature

- Reading the Literature
  - **Phase 2** – *Survey the Methodologies in the Chosen Solution Approach* (2/2)
    - Come up with a general methodology (theoretical framework) that can be perceived from methodologies used in the literature
    - Develop your own methodology (conceptual framework) based on the general methodology

Processing the Literature

- **Know the Literature** (Levy & Ellis, 2006)
  - The knowledge level is commonly demonstrated by activities such as listing, defining, describing and identifying
  - The researcher must demonstrate that he or she has read the article and extracted meaningful information

Processing the Literature

- **Know the Literature** (Levy & Ellis, 2006)
  - **Examples**

Other research also indicates that individual and group marks should be combined in-group activities (Buchy & Quinlan, 2000; Lim et al., 2003; Romano & Nunamaker, 1998).

Buchy and Quinlan (2000) interviewed 36 students participating in tutorial groups. These interviews indicated that the students felt they were becoming more conscious of learning processes of both themselves and their peers.

Processing the Literature

- **Comprehend the Literature** (Levy & Ellis, 2006)
  - Comprehension is demonstrated by activities such as summarizing, differentiating, interpreting and contrasting
  - The researcher does not only repeats what was included in the article but also knows the meaning and significance of what was reported

Processing the Literature

- **Comprehend the Literature** (Levy & Ellis, 2006)
  - **Examples**

Han and Kamber (2001) suggest an evolution that moves from data collection and database creation, towards data management, and ultimately, data analysis and understanding. For example, data processing is a base function enabling manipulation and aggregation of data, thus facilitating searching and retrieval.

Han and Kamber (2001) suggest an evolution that moves from data collection and database creation, towards data management, and ultimately, data analysis and understanding.

Processing the Literature

- **Apply the Literature** (Levy & Ellis, 2006)
  - Application is demonstrated by activities such as demonstrating, illustrating, solving, relating and classifying
  - Revealed by the 2-step process
    - Identifying the major concepts relevant to the study
    - Placing the citation in the correct category

Processing the Literature

- **Analyze the Literature** (Levy & Ellis, 2006)
  - Analysis is demonstrated by activities such as separating, connecting, comparing, selecting and explaining

Processing the Literature

- **Analyze the Literature** (Levy & Ellis, 2006)
  - **Examples**

Data mining is a process of discovering new knowledge by using statistical analysis to identify previously unsuspected patterns and clustering in large data sets (Chen & Liu, 2005).

Data mining is the analyzing and interpretation of large amounts of information. Through analyzing vast amounts of data it is possible to find patterns & relationships and from these discoveries, it is possible to make correlations (Chen & Liu, 2005).

Processing the Literature

- **Synthesize the Literature** (Levy & Ellis, 2006)
  - It entails the activities such as combining, integrating, modifying, rearranging, designing, composing and generalizing
  - Its essence is to assemble the literature for a given concept into a whole that exceeds the sum of its parts

Processing the Literature

- **Synthesize the Literature** (Levy & Ellis, 2006)
  - **Examples**

The Digital Object Identifier (DOI) is an Internet-based system for global identification and reuse of digital content (Paskin, 2003). It provides a tracking mechanism to identify digital assets (Dalziel, 2004). The DOI is not widely employed across LOR and databases and is not universally adapted by content owners (Nair & Jeevan, 2004). The DOI does not provide provision for assets to be tagged with copyright information (Genoni, 2004).

One current DRM initiative, the Digital Object Identifier (DOI), is an Internet-based system for global identification and reuse of digital content, and provides a tracking mechanism to identify digital assets (Paskin, 2003; Dalziel, 2004). However, despite being integrated in learning object technologies, this DOI is not widely employed across LOR and databases, nor is it universally adapted by content owners (Nair & Jeevan, 2004). Similarly, while most metadata schema enables assets to be tagged with copyright information, this method lacks technological enforcement (Genoni, 2004).

Processing the Literature

- **Evaluate the Literature** (Levy & Ellis, 2006)
  - Evaluation connotes the activities such as assessing, deciding, recommending, selecting, judging, explaining, discriminating, supporting and concluding

Processing the Literature

- **Evaluate the Literature** (Levy & Ellis, 2006)
  - **Examples**

> … the applications of data mining fall under the general umbrella of business intelligence. Case studies have reported implementation of data mining applications for: (1) Enrollment management (to help capture promising students) (Sanjeev, 2002); (2) Alumni management (to foster donations and pledges) (Ma et al., 2000); (3) Marketing analysis (to better allocate the marketing funds) (Glance et al., 2005); and (4) Mail campaign analysis (to judge its effectiveness and design new, better targeted mailings) (Abe et al., 2004). Based upon the similarity to applications within the business community, Liu et al (2005) speculated that data mining could also be used within the educational community for fraud analysis and detection.

Data mining has applicability to education as well as business (Sanjeev, 2002; Ma et al., 2000; Glance et al., 2005; Abe et al., 2004; Liu et al, 2005).

Processing the Literature

- **Evaluate the Literature**
  - Try to answer the following questions: (Hustadt, 2009)
    - Is the topic of the paper sufficiently interesting (for you personally or in general)?
    - Did the author miss important earlier work?
    - Are the evaluation methods adequate?
    - Are the theorems and proofs correct?
    - Are arguments convincing?
    - Does the author mention directions for future research that interest you?

Processing the Literature

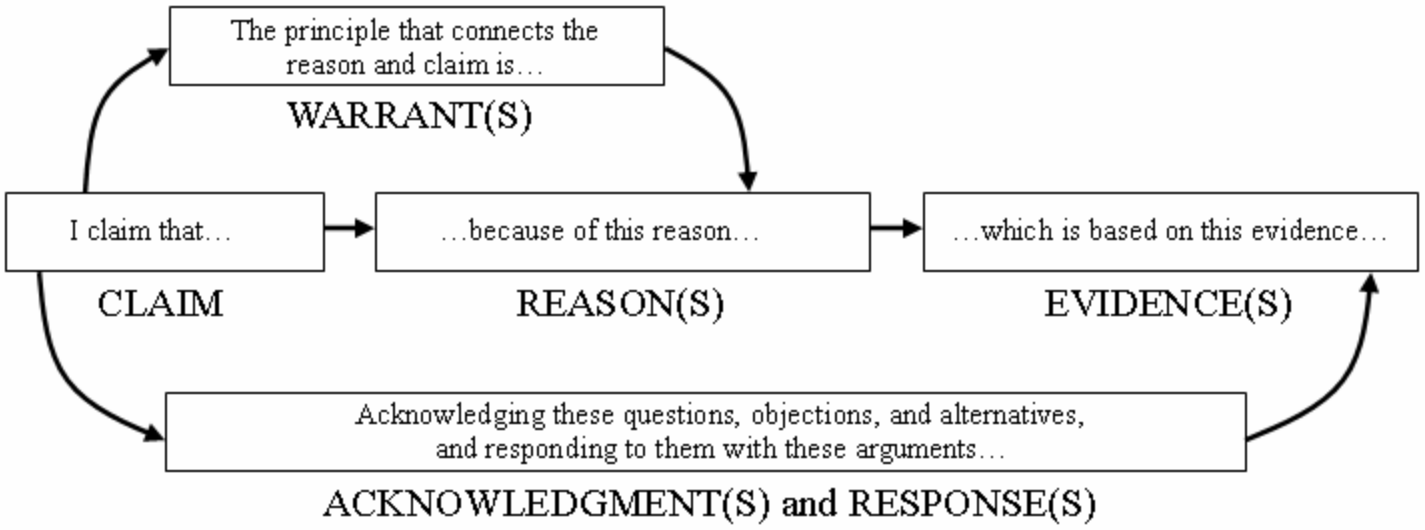
- ***Quick Exercise***
  - Read the following article and try to answer the following questions:

    Macropol, K., Fiorese, C. & Venugopal, M. (2011). *MyDepressedSpace: Classification and Search of Depression Indicators on MySpace.* Retrieved from http://cs.ucsb.edu/~kpm/paper1.pdf.

    - Is the topic of the paper sufficiently interesting (for you personally or in general)?
    - Did the author miss important earlier work?
    - Are the evaluation methods adequate?
    - Are the theorems and proofs correct?
    - Are arguments convincing?
    - Does the author mention directions for future research that interest you?

Writing the Review

- Writing Arguments (Levy & Ellis, 2006)
  - A model for argumentation similar to that used in a legal environment is suggested for use when writing research manuscripts



Writing the Review

- Writing Arguments (Levy & Ellis, 2006)
  - The problem is addressed by a claim, combined by the support to such claim
  - A claim in a research study is an arguable statement that proposes a solution to the problem
  - In order to anchor the argument around the problem, evidence and warrants are suggested
  - Warrant provides the link between the evidence and claim

Writing the Review

- Writing Arguments (Levy & Ellis, 2006)
  - The key points needed to be considered when writing the literature review
    - Structure
    - Definition
    - Reasons
    - Assumptions
    - Fallacies
    - Evidence

Writing the Review

- Writing the Literature Review (Levy & Ellis, 2006)
  - Should provide the reader with what the researcher did and demonstrate the quality of the literature used
  - It also demonstrate how you extracted the main points through analysis and how you reconstructed the main idea through synthesis

Writing the Review

- Writing the Literature Review (Levy & Ellis, 2006)
  - A suggested plan of action when writing the literature review:
    - Pre-writing/Literature review structure
    - Allocating appropriate evidences for each section
    - Developing the first draft
    - Allocating appropriate time for revisions
    - Writing the final draft

Writing the Review

- Writing the Literature Review (Levy & Ellis, 2006)
  - A model of writing the literature review based on 5 main sections:
    1. Introduction that tells the organization of the review
    2. The first section should address the independent variable(s) proposed by the study
    3. The second addresses the depended variable(s)
    4. The third addresses the studies conducted on the independent variable(s) and the depended variable(s)
    5. A summary that highlights the key research studies

Writing the Review

- **Exercise**

  Write a short review of the following research for a research on assistive systems to develop phonemic awareness for dyslexic children.

  Sampath, H., Sivaswamy, J. and Indurkhya, B. (2010). Assistive Systems for Children with Dyslexia and Autism. *SIGAccess Newsletter 96, 32-36.*

Writing the Review

- Framing the Literature Review (Cronin et al, 2008)

Table 7. Framing the review

Approach	Definition	Advantages/disadvantages
Dividing the literature into themes or categories	Distinct themes from the literature are discussed	Most popular approach. Allows integration of theoretical and empirical (research) literature. Care must be taken in ensuring that the themes are clearly related to the literature
Presenting the literature chronologically	Literature divided into time periods	Useful when examining the emergence of a topic over a period of time
Exploring the theoretical and methodological literature	Discussion of theoretical literature followed by exploration of methodological literature that would give some indication of why a particular research design might be appropriate for investigating the topic	Useful when the body of literature is largely theoretical with little or no empirical (research) literature. Can be used to identify the need for qualitative studies
Examining theoretical literature and empirical literature in two sections	Where the topic has both theoretical and empirical literature and each is discussed separately	May tend to be a description rather than a critical review

From: Carnwell and Daly (2001)

Writing the Review

- Dividing the Literature into Themes and Categories
  - 2.1 *Problem* (1/2)
    - Discuss the general definition of the problem
    - Present each of the localized instances that you discovered and the factors that may be relevant to your study
    - Refrain from a premature discussion on your problem as you have not investigated it yet

Writing the Review

- Dividing the Literature into Themes and Categories
  - 2.1 *Problem* (2/2)
    - Discuss briefly each of the approaches that were used in the literature
    - Also mention the drawbacks of these approaches, if there are
    - The section should end with an introduction to the chosen approach
    - This section should be at most 1 ½ pages long

Writing the Review

- Dividing the Literature into Themes and Categories
  - 2.2 *Approach* (1/2)
    - Start with a general description of your chosen approach
    - Then, discuss each of the works that investigated the same problem and solved it using the same approach
    - Provide an unbiased evaluation of the merits of each related work

Writing the Review

- Dividing the Literature into Themes and Categories
  - 2.2 *Approach* (2/2)
    - The evaluation should be in terms of
      - Their correlation to your study and
      - The technique they used in solving the problem.
    - Practices in the use of the approach should be apparent after this section
    - This section should be at least 3 pages long

Writing the Review

- Dividing the Literature into Themes and Categories
  - 2.3 *Methodology*
    - Provide a survey on the current methodologies that surfaced from the previous section
    - Methodologies include frameworks and sometimes software systems
    - This section should end with the ***theoretical framework***, the general framework perceived from the related works
    - The theoretical framework provides the basis for your own approach

Writing the Review

- Ethical issues associated with academic writing (Levy & Ellis, 2006)
  - A list of the main academic writing code of conduct violations
    - Falsification
    - Fabrication
    - Sloppiness
    - Nepotism
    - Plagiarism

References and Citations

- A ***reference*** is a description that identifies an information source.
- By properly referencing your sources, you (Berndtsson, Olsson, Hansson & Lundell, 2008)
  - Show how your work extends the current state-of-the-art knowledge in the area
  - Show the originality of your work
  - Give credit to other people's work
  - Support and validate arguments made
  - Show that you are familiar with the work done

References and Citations

- A ***citation*** is the use of a reference in the text
- The main reason is it distinguishes clearly between your own work and that of others
- Keep in mind that everything in the report that does not come with a citation is assumed yours (Berndtsson et al, 2008)

References and Citations

- Citations in the text should be placed (Berndtsson et al, 2008)
  - Before a punctuation mark
  - At a logical place in a sentence
  - At a grammatically correct place in a sentence
  - Before a list of items
  - Following quotations

References and Citations

- Citations and Quotations
  - The 3 basic principles for integrating sources into a paper (Harvey, 1998)
    1. *"Use sources as concisely as possible, so your own thinking is not crowded out by your presentation of other people's thinking, or your own voice by your quoting of other voices"*
    2. *"Never leave your reader in doubt as to when you are speaking and when you are using materials from a source"*
    3. *"Always make clear how each source you introduce into your paper relates to your argument"*

References and Citations

- Citations and Quotations
  - Learn to summarize and paraphrase
    - A **paraphrase** is "*the restatement of a short passage in other words*."
    - A **summary** is a "*condensation of a larger passage. A whole book can be summarized in a sentence, a chapter in a paragraph*."

References and Citations

- When to cite
  - When using facts that are not a part of common knowledge
  - When you quote verbatim
  - When you summarize the ideas and interpretations of another
  - When you make use of another's distinct structure, organizing strategy or method

References and Citations

- When not to cite
  - When the source and page location of the relevant passage are obvious from an earlier citation
  - When using facts that are part of common knowledge in the area
  - When using phrases that are not part of everyday speech

References and Citations

- When to quote
  - If you cannot think of a better way to express the thought
  - If you will be analyzing a difficult and complex passage in detail
  - When a reader may be sceptical of a controversial claim if you it in your own words

References and Citations

- Rules for Quoting
  - Quote verbatim
  - Use an ellipsis to replace words that are omitted
  - Do not use ellipsis to stitch together statements that are widely separated
  - Use a square brackets when words or phrases must be added but use it sparingly
  - Use the italicized word [*sic*] to point out errors
  - Use the bracketed phrase [italics added] for words that were italicized for emphasis
  - Distinguish quotes within quotes using single quotes

References and Citations

- Citations ACM Style
  - A citation is indicated by a bracketed number corresponding to the reference number in the References section.
  - Example:

    During high stress periods, individuals should focus on the situation-specific tasks rather than rely on general knowledge structures. [1]

References and Citations

- Referencing ACM Style
  - **Book**
    - Format:

      Authors. Title. Publisher, City of Publication, Year of Publication
    - *Example:*

      1. Fogg, B.J. *Persuasive technology: using computers to change what we think and do.* Morgan Kaufmann Publishers, Boston, 2003.

References and Citations

- Referencing ACM Style
  - **An Article in an Edited Book**
    - Format:

      Authors. Title. in Editors *Title of edited book*, Publisher, City of Publication, Year of Publication, Pages.

      - *Example:*

        1. Fischer, G. and Nakakoji, K. Amplifying designers' creativity with domainoriented design environments. in Dartnall, T. ed. *Artificial Intelligence and Creativity: An Interdisciplinary Approach*, Kluwer Academic Publishers, Dordrecht, 1994, 343-364.

References and Citations

- Referencing ACM Style
  - **A Journal or Magazine Article**
    - Format:

      Authors. Title. *Journal or magazine name, Volume (Issue), Pages.*

      - *Example:*

        1. Hirsh, H., Coen, M.H., Mozer, M.C., Hasha, R. and Flanagan, J.L. Room service, AI-style. *IEEE intelligent systems*, 14 (2). 8-19.

References and Citations

- Referencing ACM Style
  - **Conference Proceedings**
    - Format:

      Authors, Title. in *Title of conference, (Location of Conference, Year), Publisher, Pages.*

      - *Example:*

        1. Leclercq, P. and Heylighen, A. 5,8 Analogies per hour: A designer's view on analogical reasoning. in *7th International Conference on Artificial Intelligence in Design, (Cambridge, UK, 2002), Kluwer Academic Publishers, 285-303.*

References and Citations

- Referencing ACM Style
  - **Electronic Media**
    - The date of publication and the date of retrieval of the article may not be the same
    - When there is no determinate date of publication, use (N.D.) in the date field.
    - Where possible, include the name of the organization hosting the web site.

References and Citations

- Referencing ACM Style
  - **Electronic Media**
    - *Examples:*

1. MIT Project Oxygen: Overview, 2004. Retrieved March 15, 2005, from Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology: http://oxygen.lcs.mit.edu/Overview.html.
2. Steele, B. Look, Ma, no wires! Cornell class project tests wireless networking, Cornell Chronicle, 31 (35). Retrieved February 15, 2004, from Columbia University: http://www.news.cornell.edu/Chronicle/00/5.18.00/wireless_class.html.

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