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HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Technical Writing and Presentation
Reading and Reviewing

SOICT - 2020

Contents

1. Reading Literature
2. Finding Research Papers
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4. Developing a Literature Review
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Motivation

The more that you read, the more things you will know. The more that you learn, the more places you'll go

Dr. Seuss
I Can Read With My Eyes Shut!

source: Google

Motivation

- Human knowledge is an infinite treasure
- Do not reinvent the wheel
- What should we do?
  - “Stand on the shoulders of giants”, Google scholar
  - Discover knowledge by building on previous discoveries

=> Reading and reviewing papers is an important activity of the scientific process

source: Google

READING LITERATURE

LITERATURE

- Tranditional definition: a collection of written books, Wikipedia
- Other definition: “literary means not only what is written but what is voiced, what is expressed, what is invented, in whatever form”, Greil Marcus & Werner Sollors

source: Google

Reading Literature - Importance

- Understand key concepts, terminologies, theories, discoveries, and debates
- Identify new lines of questioning or investigation
- Discover your work is indeed novel or innovative
- Become familiar with key researchers in the field

Reading Literature - Situation

- Search of literature can lead to hunderds of potentially relevant papers
- Papers are not textbooks, and should not understand every line
- The number of papers that a researcher working on a particular project has to know well is usually small

In dblp, you now find publications from ...

- **5,800+** conference and workshop series
- **1,600+** journals
- **90,000+** table of contents

source: DBLP

Reading Literature - Strategy

- Becoming an effective reader is important
- Give a paper: decides to give it more or less time that it deserves
  - Skim through it to identify the extent to which it is relevant
  - Only read it thoroughly if there is likely to be value in doing so
  - Make effort to understand the details

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FINDING RESEARCH PAPERS

Finding Research Paper

- Each research work builds on prior work
- The number of existing publications is very large
- A consolation is that recent work already explored the older literature => carefully search for current work

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Finding Research Paper - Path

- Use obvious search terms to explore the web: publications, projects, solutions, etc.
- Use special search tools for academic papers such as google scholars
- Seach the publisher-specific digital library such as Springer, ACM, IEEE
- Vist websites of key research groups and researchers working in the area
- Follow up the references in promising research papers
- Browse the recent issues of journals and conferences in the area
- Consider using the citation indexes
- Discuss your work with as many people as possible

Finding Research Paper - Path

- The process of search and discovery of useful papers is a form of learning
- Finding all *relevant* work is hard; finding all *significant* work is a critical part of doing research
- Searching and reading are separate activities, do not try both at one
- If your idea is not so original after exploring the literature, be honest – review your work to see what aspect may be novel

CRITICAL READING

Example

Learn how to earn more from the best ones

Hello,

If you are looking for a way to make something on the side, you should know that people like you are already doing it.

Daniel made over $5000 in his first month. Cara scored over $1500 in just one week. How much you think you can make?

Find out >> here

And don't forget to fill your data to access full details on how to start earning extra every week.

Best of luck from

Options XO Team

- Would you click on the hyperlink? Why?
- Our life's experiences make us suspicious of emails or advertisements like this
- We might ask
  - Are these real people earning extra money so easily?
  - Is their method legal and ethical?
  - Is there really no risk?
  - What will they do with my personal details once I fill in?

Critical Reading

- Active attempt to identify the contributions and shortcomings rather than simply reading from one paper to the other
- Good researchers should have ability to analyze the work and claims of others
- A paper is refereed is an indicator that it is of value, but it is not a guarantee, because:
  - A paper is a snapshot of research work at a moment in time – what the researchers knew when they submitted
  - Assumptions may be implausible
  - Dataset used may be so tiny, that the results are meaningless

Critical Reading

- Don’t accept something as true just because it was published
- Don’t evaluate researchers being dismissive of their past work
- We should respect published papers, and learn from them about strengths and weaknesses
- Inexperienced researchers see other work either perfect or poor, with nothing in-between. Usually, neither of these extremes is correct

Critical Reading

- Read papers by asking critical questions, such as
  - Is there a contribution? Is it significant?
  - Is the contribution of interest?
  - Are the results correct?
  - Is the appropriate literature discussed?
  - Does the methodology actually answer the initial question?
  - Are the proposals and results critically analyzed?
  - Are all the technical details correct? Are they sensible?
  - Could the results be verified?
  - Are there any serious ambiguities or inconsistencies?

Example 1

- Excerpt
  - The aim of the study was to describe how patients perceive involvement in decisions concerning their own treatment and nursing care.

    Sample

    A convenience sample of 12 patients was selected from three mixed-sex medical wards. The only criterion for inclusion in the study was a willingness to participate.

Example 1

- **Is the methodology valid here?**
  - Critical readers would question whether the sample size was big enough to fulfil the aim of this study.
  - They would also question whether the sample was representative enough of the wider population, as the criterion for inclusion in the population sample perhaps created an unrepresentative group.
  - The personality type that is willing to participate in a study of this kind may suggest subjects that are already highly involved in patient participation, thus skewing the survey results.

Example 2

- Excerpt
  - Each interview was tape recorded and took between 60 and 90 minutes to complete. After each interview, the tape was listened to and transcribed. During this period, hunches or working hypotheses were identified which were explored in subsequent interviews. The major theme of 'toeing the line' was identified that provides insight into how patients view 'collaboration'. The remainder of this paper will focus on an exploration of this theme and its significant implications for nursing.

Example 2

- **Has the author overgeneralized the results here?**
  - The author has used the findings from a very small sample size, that may not represent a sufficient range of patients, to support a major line of argument about how patients view collaboration.
  - The authors are inferring that the results gained from surveying these patients can be generalized to all patients.

Example 3

- Excerpt
  - A third illusion is that leaders are not necessary in good teams. Leadership is back in fashion. But people in teams often argue that good teamwork makes leadership redundant. Explicit or strong leadership behaviour is seen as contrary to the notional equality of teams.

    This illusion and the lack of leadership it produces is one of the worst things that can happen to a team. It ensures an obsession with internal power relations and a team without a champion. A leader is the team's link with the wider organisation and the vital conduit for resources, support and credibility. Teams need help to understand how their leadership requirements change and how to make the most of the leadership resources distributed among members..

Example 3

- Who says leadership is back in fashion
- Is this assumed knowledge within the discipline of Management?
- This point is stated as fact
- What theory is it based on?
- Do you agree with it?

DEVELOPING A LITERATURE REVIEW

Literature Review

- A structured analysis of a body of literature, and may cover work from several area of research
- These papers should be grouped by topic, and discussed in a way that allows reader to understand their contributions, limitations, and questions that they leave open

Literature Review - Questions

- **Who** wrote the text and what are the author's qualifications?
- **When** was it written?
- **Who** is it for?
- **What** is the main purpose?
- **Why** was the study carried out?
- **What** is the author's main point, or thesis?

- **How** has the author collected the data?
- **What** are the findings?
- **What** relevant sources does the author use?
- **What** limits did the author place on the study?
- **What** aspects are relevant to your research question/area?
- **What** is your evaluation of the text?

Literature Review - Progress

- When you read a paper that you think will need to be discussed, add it in
- Rough stage: focus on organization and content rather than on presentation
  - group papers by topic and contribution
  - briefly summarize each paper's contributions and evidence used to support the claims
  - add notes to each paper: features that are of interest, shortcomings, how the work might better
  - no need for drafts to be polished, no one but you will early versions
  - Early drafts should be as inclusive as possible

Literature Review - Progress

- Refined stage:
  - Decide whether to include each of the paper you read.
    - Obvious factors: how close some other work to yours, how influential it has been
    - Subtle factors: you find a survey paper or a recent paper with a literature review of older papers; so many older papers do not need to be discussed
  - When you remove a paper, put the discussion in another file (or comment it out) rather than deleting it
  - Steps: rewriting, editing, polishing

EVALUATION

Authors, Program Chairs, Reviewers

- Submission and reviewing process
  - When authors complete a paper, it is submitted to program chairs of a conference (or editors of a journals)
  - The chairs send the paper to reviewers who evaluate the paper and return assessments
  - The chairs use these assessments to decide whether the paper should be accepted or rejected (or further revisions in case of journals)

Contribution

- Contribution is the main criterion for judging a paper
- Typically, a paper is a contribution if it has two main properties: *originality* and *validity*
  - Originality: the degree to which the ideas are significant, new, and interesting.
    - Most papers are to some degree extensions of previously published work
    - Impact of the contribution: how much change would follow from the paper
  - Validity: the degree to which the ideas to be sound
    - Should contain proof or analysis, experiment, simulation to allow verification by other scientists
    - Comparison to existing work is an important part of validity

Evaluation

- Critical questions:
  - Is the contribution timely or only of historical interest?
  - Is the topic relevant to the venue's typical readership?
  - What is missing? What would complete the presentation? Is any of the material unnecessary?
  - How broad is the likely readership?
  - Can the paper be understood? Is it clearly written? Is the presentation at an adequate standard?
  - Does the content justify the length?

Evaluation

- Quality of a paper can be reflected in its bibliography
  - How many references are there?
  - Are there recently published references?
  - Are there references to the major journals or conferences in the area?
- Reviewers should make an effort to search for errors that don't affect the quality of the work but should be corrected before going into print
  - Spelling
  - Syntax
  - Errors in the bibliography...

Content of Reviews

- Two purposes:
  - Mechanism used by program chairs, editors to decide whether papers should be accepted
  - Means to share expertise between scientists via comments for the authors
- Review content is an analysis of the paper, explaining why it is or is not suitable for publication

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