Topic for Discussion:

Project Proposal and Literature Review for Engineering Students

Target audience: Masters students within the engineering field who are in the process of writing a proposal

Presenter: Dr. Michael Ayomoh
Department of Industrial and Systems Engineering, University of Pretoria

Some Notable Proposal types:

- A tender to bid for a job
- Requesting support for a business or a foundation
- Applying for a research grant
- For admission into an academic/research position: Masters, **PhD**, Post Doctoral Fellowship

Why PhD Research?

❑ Are there new things in the world? The answer is "Yes" and "No"

❑ Yes for a researcher because:
▪ He/she sees old things with new views
▪ there are so many unanswered questions about the old things that already existed

Why PhD Research? Contd…..

❑ No to an average mind because
  ▪ they see old things same old way
  ▪ they never cared about the unanswered questioned

❑ You create problems by solving problems
❑ You discover problems by solving problems
❑ Research can never come to an end

What is a Proposal?

- It is a well planned and

- structured **initial** outline for a proposed research

- with explicit details on the:

- what, why, how and when related issues around the research.

It aims at addressing the following

- a clear research question and specific approach to answering it

- Highlights originality/significance

- Explains how it adds to, develops (or challenges) existing literature in the field

- Persuade potential supervisors or funders of the importance of the work, and

- why you are the right person to undertake it

A PhD research proposal can be in two versions:

❑ abridged between [2,500 and 3,000] words, or 5-6 pages on the average (for submission)

❑ Detailed (to be developed into a thesis)

Content/Structure of a PhD Proposal

- **Title [subject to change]**

- **Summary/Abstract**

- **Introduction**

- Background Study/Information [keywords centred]

- Problem Statement [Specific]

- Research Question(s) [Specific]

Content/Structure Contd…..

- Aim(s)/Objective(s) [Must be Specific]

- Significance/Rationale [Generic and Specific]

- Method/Approach/Solution Techniques [Must be Specific]

- Deliverables [Must be Specific]

- **Review of the Literature** [to identify the research gaps; The core job]

Content/Structure Contd…..

❑ Conclusion

❑ Research Plan and Timeline [Gantt Chart format] [3+ years full-time; 5+ years part-time] (Estimated duration)

Stages of research	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Selection of topic	■						
Data collection from secondary sources	■						
Literature review		■	■	■			
Research methodology plan			■	■			
Selection of the Appropriate Research Techniques				■	■		
Analysis & Interpretation of Data					■	■	
Findings and recommendations						■	
Final research project						■	■

Gantt Chart

Some Tips about PhD

❑ PhD is depth oriented and not width driven

❑ PhD is not about the number of pages or volume of one's thesis but the EFFECTIVE CONTRIBUTIONS TO KNOWLEDGE

❑ An upcoming PhD is expected to be deeper and likely tougher than earlier PhDs in same field.

Extra-Tips

❑Masters degree is more of an adaptive research (applicative research)

❑PhD is primarily focused on theoretical advancement

❑PhD can be extensional (i.e. advancing an existing theory) or innovative (discovering a theory that never existed)

PhD Admission/Progress: Some Influencing Factors

- ❑ nature of the proposed research
- ❑ quality of the research ideas
- ❑ effectiveness of the proposal in communicating research ideas
- ❑ the "match" between the proposed research and the potential supervisor
- ❑ your quality time to work (availability)

A PhD research may not go 100% as planned despite a well written proposal. Amazed? ☺

Hence, should a research be static with respect to the proposal or dynamic?

What is the level of deviation? Major or Minor

PhD proposal evolves as the work progresses in light of the following

- detailed literature review

- further consideration of research approaches and comments from supervisors and other academics

A proposal is an initial outline rather than a summary of the 'final product'.

What is Literature Reviewing?

Why the need for Literature Review?

How can you make an initial difference in your research world? It is by writing a review paper [leads to hundreds of citations in a short period]

Writing a review paper (critical)

Citing Research Materials

1. Books

Article title. (Year, Month Date of Publication). Retrieved from URL

Teen posed as doctor at West Palm Beach hospital: police. (2015, January 16). Retrieved from http://www.nbcmiami.com/news/local/Teen-Posed-as-Doctor-at-West-Palm-Beach-Hospital-Police-288810831.html

2. Journals

Last, F. M., & Last, F. M. (Year Published). Article title. *Journal Name, Volume*(Issue), pp. Pages.

Jacoby, W. G. (1994). Public attitudes toward government spending. *American Journal of Political Science, 38*(2), 336-361.

Citing Research Materials Contd……

1. Conference Papers

Last name, FM. (Year published). Title of Paper or Proceedings, Title of Conference, Location, Date. Place of publication: Publisher.

Cloyd, AM. (2014). Surveying students: A look at citation habits of college students, presented at EasyBib Info Lit Conference, New York City, 2014. New York, NY: EasyBib Publishing.

How to Search for Journal Articles and Conference Proceedings Using "Endnote"

1. *Install "Endnote Software" from IT unit*
2. *Open Endnote from Microsoft Word*
3. *Select "Go to Endnote"*
4. http://www.library.up.ac.za
5. *Search*
6. *Databases*

   Science Direct
   Sage Journals
   Emerald

Google Scholar
Settings
Bibliography manager
Click toggle button (Show links to import citations)
Save
Import to endnote
Goto endnote select the article
Insert Citation
Insert selected citation

END

THANK YOU