Starting to think about your research......

Prof CME McCrindle

DRIS Graduate Research Hub
What is Research?

- Research is preceded by an in-depth review of current knowledge.
- Research originates with a question or problem related to that knowledge.
- Research is a process of enquiry and investigation of this question or problem.
- Research compares and critically evaluates dependent and independent variables or themes.
- Research requires a clear articulation of aims, objectives and a time-linked work plan.
- Research requires the collection, analysis and interpretation of data.
- Research has a logical flow that builds up evidence to answer the research question.
- Research increases knowledge.
Available Resources?

- Computer, printer, scanner
- Appropriate software for writing up and analysing data
- Access to internet, sufficient data
- Accessibility of study area
- Working space: desk
- Laboratory facilities
- Other?
Research your own life-world

The easiest way to do successful research and complete in time is to research something with which you are already familiar and where there is already available data.
Budgeting and funding

- The cost of research must be considered well in advance
- Write a budget and cost out the research
- Find funding BEFORE you begin (DRIS)
- Align your research to a call for research that is funded (DRIS)
- Look for affordable alternatives – less expensive methods
- Generate and analyse data in line with your employment contract
- Cheapest option: data mining – use secondary data
**Scope**

Mini dissertation: About 70 pages, 40 references. Proves that student is able to investigate a new problem using known research methods. 6-18 months.

Dissertation (MSc): About 120 pages. More than 40 references. Proves that the student can do independent research. One to 2 years.

Thesis (PhD or doctorate) More than 120 pages, about 70 or more references. New findings or theories are described/proved. Two to 3 years.

**SUBSIDY is important. If a degree takes too long there is no subsidy!**
Planning a logical flow

- **Develop research question**
- **Collect and analyse data to support argument**
- **Discussion of findings**
- **Research conclusions**

**Review other people’s opinions on topic**
Outline of a thesis

Research question

Research findings

Research Conclusions
Research topics

How to select a research topic

https://www.youtube.com/watch?v=nXNztCLYgxc&list=PL6dr1_iNtkeirR9FHM5QbcMrDGZH0dEGr&index=1

https://www.youtube.com/watch?v=Ga7w-czB7lo&index=2&list=PL6dr1_iNtkeirR9FHM5QbcMrDGZH0dEGr

Dependent and Independent variables:

https://www.youtube.com/watch?v=_BmjujIZeXQ&list=PL6dr1_iNtkeirR9FHM5QbcMrDGZH0dEGr&index=3
From topic to research question

- Having watched the video, please refine your topic
- Now see if you can ask a question linked to the topic
Exam question:

“List 5 signs/symptoms of Diabetes”
Answer:
1. High blood sugar
2. Frequent urination
3. Glucose in urine
4. Poor circulation
5. Susceptibility to disease
Six of your own key words

- Write down 6 key words that you think define your proposed research
Draft title

Now arrange your key words to make a draft title for your research

Maximum 15 words
Background and motivation for study

- This is a summary, from relevant literature on the topic you have chosen, of a problem which exists and needs to be solved.

- To get to a problem you are going to have to read about your topic, refine it down to a size that you can manage to investigate in the time allowed and find at least 5 key publications that bring you up to date on what is happening.

- The next step is to ask a research question that needs to be solved in order to find a solution to the problem.

- The research question can be broken down into sub-questions which will lead to your objectives.
An example

- Topic  Community development research
- Problem: In Limpopo Province, every year, people drown in the rainy season
  
  http://citizen.co.za/103504/26-drown-limpopo/
  

- Refine the topic: People drown in the Masekane river at Xihoko village near Letsitele

- Research question: How can community development prevent drowning in the Masekane river at Xiholo village, Letsitele in Limpopo Province South Africa?

- Subquestions:
  - Are there publications in the literature on how to prevent drowning in rivers?
  - Could any of these suggestions be used in Xihoko?
  - What method could be used to find out if any of these would be used by the community?
Literature Review

- Go from general to specific.
- Use your sub-questions and key words to find your subheadings.
- Use the Library and Search Engines to find publications which contain key words that accurately describe your research.
- Read these references and write them down alphabetically according to the surname of the first author.
- The best references to use are articles less than 5 years old, in peer reviewed journals.
- The next best are articles published in the last 5 years online on reputable websites.
- Text books are a good starting point to understand the subject but are usually very out of date.
- Newspaper articles etc are often useful to set the scene.
Writing and citing References

The layout of “References” is specific for a particular Faculty at the University
UP mainly uses Harvard and Vancouver
Assistance can be found on the Library website
http://www.library.up.ac.za/referencing/
Be VERY careful of layout and punctuation as some examiners look first at the bibliography
More than half of your references should be from Peer Reviewed Journal articles and less than five years old
Many references now come from the internet.
Library Home >> Faculty Libraries >> Health Sciences >> Journals

Health Sciences Libraries

Health Libraries Home
Staff
Please select

Journals in the field of Health Sciences

How to search for articles in journals

Referencing Styles
- Vancouver
- Harvard

Department of Nursing Science
Department of Physiotherapy

Referencing Management Tools
- My EndNote Web
- RefWorks

Journal Abbreviations
- NLM Catalog: Journal abbreviation
- Medical Journal Abbreviations (Internationally recognised abbreviations for journal titles)

Accredited Journals (Endorsed by the Government Department of Education)
Example: “General article”

Title: Patterns and risk factors for deaths from external causes in rural Malawi over 10 years: a prospective population-based study

Authors: Steady Chasimpha, Estelle McLean, Menard Chihana, Lackson Kachiwanda, Olivier Koole, Terence Tafatatha, Hazzie Mvula, Moffat Nyirenda, Amelia C. Crampin and Judith R. Glynn


Quote:

“Drowning (including four deaths in people with epilepsy), road injury and suicide were the leading external causes. Alcohol contributed to 21 deaths, all in adult males. Children had high rates of drowning (9.2/100,000 per year, 95 % CI 5.5-15.6) but low rates of road injury (2.6/100,000 per year, 95 % CI 1.0–7.0).”

(This it the sort of general reference on drowning in rural communities, you could use)
TEACH YOUR CHILDREN

• How to float, tread water and swim with clothes.
• To only swim when an adult is present.
• Not to play, run or ride a bike around swimming pools.
• To only swim in designated swimming areas and if a lifeguard is on duty.
• How to deal with currents, undertow and uneven surfaces in open water.
• Not to jump in to help when others are in trouble.
You have identified a problem, formulated a question, your research is a way to find the ANSWER.

To find the answer you must collect and analyse data

Collecting and analysing data is the METHOD of research and it provides the answer as RESULTS, DISCUSSION and CONCLUSION
Is my horse grey?

- Photograph
- Chemical composition of hair
- Genome
QUALITATIVE DATA
Attributes, labels or non numerical entries. This is called Categorical Data

QUANTITATIVE DATA
Numerical measurements or counts

<table>
<thead>
<tr>
<th>City (qualitative)</th>
<th>Population (quantitative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polokwane</td>
<td>801 257</td>
</tr>
<tr>
<td>Johannesburg</td>
<td>2 845 968</td>
</tr>
<tr>
<td>Krugersdorp</td>
<td>350 125</td>
</tr>
</tbody>
</table>
Where are you going to publish?

UP Library Services website:

Accredited Journals:

Choose from:

ISI (web of Science)

IBSS (International Bibliography of the Social Sciences)

DHET Accredited Journals South Africa
Think about your question and write down the answer in about 100-200 words, starting with:

IT IS CONCLUDED THAT....
# Responsibilities summary

<table>
<thead>
<tr>
<th>STUDENT</th>
<th>SUPERVISOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration each year</td>
<td>Check if registered</td>
</tr>
<tr>
<td>Supervision and progress agreement</td>
<td>Signed and submitted to admin</td>
</tr>
<tr>
<td>Submit protocol on time</td>
<td>Edit protocol</td>
</tr>
<tr>
<td>Submit ethics approval</td>
<td>Edit ethics approval</td>
</tr>
<tr>
<td>Research timeline</td>
<td>Meet at arranged times</td>
</tr>
<tr>
<td>Research activities</td>
<td>Funding applications</td>
</tr>
<tr>
<td>Results compiled and analysed</td>
<td>Editing results, checking statistics</td>
</tr>
<tr>
<td>Chapters written on time</td>
<td>Chapters edited on time</td>
</tr>
<tr>
<td>Draft publication</td>
<td>Editing publication</td>
</tr>
<tr>
<td>Thesis final submission</td>
<td>Choose external examiners</td>
</tr>
<tr>
<td>Editing examiners comments</td>
<td>Quality control and administration</td>
</tr>
</tbody>
</table>
Proposal or protocol?

- Sometimes a proposal or protocol is needed and must be passed before you can do research.
- A proposal is written if you are applying for funding, a protocol is written for ethics approval.

1. Title
2. Executive Summary (as per Ethics Committee guidelines)
   2.1 Introduction Why is the project necessary?
   2.2 Aim/Objectives What are you going to do? ?
   2.3 Methods How are you going to do the project?
   2.4 Benefits What will be the project outputs? What is the projected impact of the project?
3. Literature Review, problem statement aim
4. Methods
5. Ethics
6. Logistics/Timeline/ Budget
7. References
8. Addendum: all relevant forms including ethics approval etc
The research protocol

Title. A clear title indicating the scope of your proposed work precisely.

Research question or questions. What do you intend to try and find out? Why is it important?

Research context. What work has been done on the subject up till now? Mention the main scholars who have contributed to our current understanding of it. How will your research be new?

Sources and methodology. What main primary sources will you use? Are there any special issues like access to archives, travel, languages or copyright, and if so how will you address them? How will you analyse the sources? Will you draw on any other related disciplines (such as economics, literary theory or art history)?

Time schedule. A clear indication of how long the activities that will be carried out in order to bring the research to completion should be stated;

Budget. The amount of money and sources that will be required to complete the project
First things first

In academia two things occupy time:

- Urgent things
- Important things

It is important to prioritise important things (putting first things first) as they get lost under the huge number of “urgent” things (like email, or like a cell phone ringing)

Organise time on a weekly, rather than daily, schedule, to make it more flexible.
<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jan-mar</td>
<td>Apr-Jun</td>
<td>Jul-Sept</td>
</tr>
<tr>
<td>Registration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protocol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protocol defence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chapter 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratory work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chapter 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chapter 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chapter 4, 5, 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit to Externals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thesis Defence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit article</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>