FACULTY OF HEALTH SCIENCES

GUIDELINES FOR WRITING RESEARCH PROPOSALS

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One of the most important aspects of the research process is the preparation of a research proposal. It deals with some of the most important questions regarding the research project including ***what*** you want to do, ***why*** it is important and ***how*** you are going to do it. A good, well thought out and written proposal not only helps you to organise your own thoughts but it also aids in planning the strategy of the research plan. A high quality research proposal always, without exception, leads to a high quality research project. The academic merit, layout and format must be considered extremely important when preparing a research proposal.

1. ACADEMIC MERIT

The academic merit of a research project is the only aspect of the proposal that should be considered for approval by the Faculty Higher Degrees Committee. Correcting poor grammar, spelling mistakes, and attending to the layout and format of the research proposal are issues that should be addressed by the student and supervisor. Questions regarding the validity, standard, need, financial and institutional implications, benefits and value of the study are considered by the Faculty Higher Degrees Committee and secondary considerations as to the format and layout is only questioned when a low quality proposal is brought before the committee. The academic merit of a project is determined by the level of the study (B.Tech / Hons, M.Tech, Masters or D.Tech/ Doctorate / PhD), the topic, the research already performed by other workers in the field, the needs and requirements of the local, national and international community as well as the financial layout required to perform the study.

2. LAY-OUT

The following technical layout for research proposals are compulsory.

2.1 Typescript

All research proposals must be **typed on A4** paper, one side only. An office style **font** (Arial, Times new Roman) size 12 (unbolded) for paragraphs (justified), **size 12 (bold) for sub-headings** (left aligned) and **main headings** (centred or left aligned) should be used.

2.2 Margins

Typed pages should be aligned at a constant distance from the top and bottom of the paper and left and right margins should not vary from page to page. The following margins must be used:

Head and bottom margin	**20 mm / 2 cm**
Left hand margin	**30 mm / 3 cm**
Right hand margin	**15 mm / 1,5 cm**

2.3 Spacing

Text should be typed in **one and a half spacing**.

2.4 Headings

All headings must be placed against the **left margin**. Make use of capital letters and do not follow with a full stop. Take note that headings are **not underlined**. For sub-headings the same procedure must be followed.

2.5 Pagination

The folio or page number must appear on the **right hand** side at the **head or the foot** of the page but should be in the same position for all pages. The use of Arabic numerals is compulsory throughout.

2.6 Abbreviations

As a general rule, **no abbreviations** should be used in the text. Those in common use, such as titles which precede a personal name, for example, Mr., Mrs., St., Rev., Hon., and well known initials which are immediately recognisable for the countries or organisations which they represent, e.g. U.S., U.N., Y.M.C.A. may be used. Recognised abbreviations, within a particular discipline, are permissible, provided they are defined the first time they are used. In footnotes and in bibliographical entries, abbreviations may be used with propriety.

2.7 Quotations

The use of quotations should be **avoided** as far as possible and used only when the phrase has significance in its quoted form. A quotation or excerpt from another book or journal which is introduced into the text should be **as short as possible**. The quotation should be reproduced exactly and follow the spelling, punctuation and paragraphing of the original. If the direct quotation does not occupy more than three typewritten lines in length, it can be incorporated into the text and enclosed between inverted commas.

2.8 Numbers and Symbols

- A **sentence should never be started with a numeral**, even when there are other numerals in the rest of the sentence, for example: *Five hundred and sixty more cars can be accommodated in 3 new parking lots.*
- If the numeral qualifies a unit of measurement, that **unit should be spelled out in full** and not abbreviated, for example: *Twenty five kilometers from the city, is a forest.*
- **Numerals** should be used for **dates, street numbers, telephone numbers, percentages, decimals** and **exact sums** of money.

2.9 Tables, Figures, Diagrams and Illustrations

Tables must be identified by a **separate number and a short descriptive title**. Tables are numbered in sequence, irrespective of the heading or section, and the number and the title are placed **above** the table.

Each table should appear **as near as possible after the place where it is first mentioned in the text**. Columns in tables should be clearly headed. Avoid large blank spaces at the bottom of a page, the text should be resumed immediately below the table on the same page. The table including number and caption must be kept within the normal framework of the typing area. If required a table may be typed in the landscape format but the page number should always appear in its normal position.

The term '**Figure**' is normally used to denote any graphic illustration other than a table. Each figure must be identified by a **number and a brief descriptive title**. Figures are numbered in sequence using Arabic numerals and the number and title are placed **below** the illustration, not above it, and below any border that may surround the figure. All figures should be **placed as near as possible to (but never before) the related discussion**. In the text, reference to a particular figure is made by quoting the figure number, for example, "Figure 1 shows mean monthly and daily minimum temperatures".

Footnotes or Keys may be used to explain or qualify figures or abbreviations given in a table. Tables or figures borrowed from other publications must be referenced.

2.10 References

2.10.1 Format of Referencing

Amongst many different methods of referencing the following two methods are the most frequently used:

Harvard method

The references are referred to in the text by the author's surname followed by the year of publication (in brackets) and are listed in alphabetical order by year of publication in the list of references. If the same author is cited more than once for a given year the letters a,b,c are used to distinguish the articles. If their citation is only to a particular page then this is shown by the use of a colon followed by page numbers (after the date).

- Nyhan, M.J. and Johansen, R. (1981) A lesson in interactive television programming, *Journal of Library Automation*, vol.14, no.2, pp.103-108
- Nyhan, M.J. and Johansen, R. (1981) A lesson in interactive television programming, *Journal of Library Automation*, **14(2):** 103-108
- Robertson, A. (1979) Teletext and viewdata, In: Johansen, P. ed. *Television to*
- *Home Computer*, Poole: Blandford Press, pp.119-145.

When citing references in the text it is done as follows:

- Citing one author: …….(Moore, 2005)
- Citing two authors: …….(Hawkins and Houreld, 2004)
- Citing more than two authors: …….(Kachelhoffer *et al.*, 1991)

Numerical method

The references are numbered in ascending order in the text, and are listed in that order in the list of references. In the text itself, the numerals are typed slightly above, (superscript)[2], the list of the text.

- 1. Nyhan, M.J. and Johansen, R. A lesson in interactive television programming, *Journal of Library Automation*, vol.14, no.2, Feb. 1981, pp.103-108
- 1. Nyhan, M.J. and Johansen, R. (1981) A lesson in interactive television programming, *Journal of Library Automation* **14(2):** 103-108
- 2. Robertson, A. Teletext and viewdata, In: Johansen, P. ed. *Television to Home Computer*, Poole: Blandford Press, 1979, pp.119-145.

General

The following components must be given when listing references:

Books: Author Surname; Initials; Year; Title; Edition; Editor; Publisher; Place and Pages

Journals: Author Surname; Initials; Year; Title; Journal; Volume; Number and Pages

2.10.2 Authors

Referring to work being done by authors can be done in one of two methods. The following serve as examples:

One Author

- With regard to the transfer of culture, Pauw (1975:86), … OR
- Pauw (1975) refers to the transfer of culture …

Two Authors

Regardless of which method is used, referring to the work of two authors is done as follows:

- In a recent study, Leikind & Miles (1975:1), estimated …

More than Two Authors

In the case where more than two authors are referred to, the following method should be used:

- A different method to distinguish between curriculum concepts is used by Kachelhoffer, Malan and Knoetze (1991:5)……

Once you have referred to all the authors the method of reference change as follows:

- Occupations according to Odendaal and coworkers, (1985:82) ……..

Unknown Authors

In extreme cases information is found without any reference to an author. In this instance the text reads as follows:

- It is important to understand that tertiary education refers to a hierarchy (third level) of education (Anon:12).

Authors with the same surname

Often one finds work of authors with the same surname. In such cases the initials of the authors are used.

- J.H. Strydom (1968:11) has concluded ….

Same Author in the same year

Sometimes authors write more than one article in the same year. In such instances the following procedure is followed:

- The masses will terminate with a B-degree … AND
- Universities are the leader of the whole field of post secondary education ..

Both the above were said by the Committee of University Principals in 1987. Compare the **titles** of the work. Because the latter's first word of the **title** is first in the alphabet, these references would read as follows:

- The masses will terminate with a B-degree …… Committee of University Principals (1987b). AND
- Universities are the leader of the whole field of post secondary education … (Committee of University Principals (1987a).

Institutions and associations as Authors

In such instances the institution or association is the author for example:

- This Conference resolves that the NACA Council request the State President …. (National Association for Clean Air, 1989:1).

Author as in the case of Government Gazette

Often one uses an act or regulation as a reference. In these instances the following is done:

- The Machinery and Occupational Safety Act (South Africa, 1983:3) makes provision for ….

When the source is listed the Government Gazette's **number** must be given.

2.10.3 Reference to pages

Reference to one page

The above examples of authors clearly indicate the method when referring to one page.

Reference to two pages

In cases where there are referred to two pages, the method used is as follows:

- Mostert (1985:33/34) concluded that the situation analysis and determining needs are synonymous. (pages in sequence) OR
- Mostert (1985:23, 34) concluded that the situations analysis is the first step in curriculum development. (pages not in sequence)

References to more than two pages

In this instance the following method is used:

- Kruger (1980:35-52) can be consulted for a more comprehensive discussion on this topic and other information ….

Reference to text without page numbering

In exceptional cases certain sources do not number their pages. In such cases it is recorded as follows:

- Certain goals have been stated. As a result of formal education, certain behaviours are expected (Wheeler, 1983:n.p).

2.10.4 Citing

Only in **exceptional cases** a secondary source may be used as a reference.

Personal communication

Personal and private communication may be used as a reference:

- Lloyd, M. 1999: The effects of air pollution on health. Personal discussion, 25 June 1999, Pretoria. (Chief Director: Air Pollution Management, Department of Environmental Affairs and Tourism. Tel. +27 (011) 555 2244)

2.10.5 Internet Websites

Computer programs

- Author (if given), title of program (underline or use italics), version (in round brackets), form i.e. Computer program (in square brackets), date (if given) and availability i.e. distributor, address, order number (if given)

CD-ROM

- Database (underline or use italics), [CD-ROM], inclusive dates (in round brackets), place, producer, availability, distributor file (if any)

Journal abstract/index entry from a CD-ROM or Online bibliographical database

- Author, title (not underlined or italicised), [CD-ROM], journal information (journal title underlined or italicised), abstract/index entry from: give information sufficient for retrieval of the abstract/index entry from the database

2.11 Length

Research proposals must not exceed the following number of pages. This limitation excludes any addendums or appendices.

- B.Tech / Hons 4 to 6 pages
- M.Tech / Masters (partial fulfilment) 6 to 8 pages
- M.Tech / Masters 8 to 10 pages
- D.Tech / Doctorate / PhD 10 to 15 pages

3. FORMAT

The following format must be adhered to irrespective of the level or programme of study.

3.1 Title page

The emphasis is on a **simple, clear**, and **straightforward** title which **requires no explanation** and allows the reader to anticipate what the research is about without having to read the rest of the proposal. The title is phrased in a manner that **does not suggest bias** or **preconceived beliefs** about the planned research.

The Effect of Calcium on Bone Mineralization

A research proposal presented to the

Faculty of Health Sciences, University of Johannesburg,
as partial fulfilment for the Masters degree in
Biomedical technology by

Andrew Wills
(Student number: 956007)

Supervisor: _____ _____
Prof. A.Has been Date

Co-Supervisor: _____ _____
Dr. B.Wannabee Date

3.2 Executive Summary

This section outlines in very brief terms the **research problems, aims, methods** and **procedure, sample,** and **anticipated research products or output (these headings must not be included)**. Consider writing the executive summary in four paragraphs with the first addressing the problem of the study, (provide references), the second the aims of the study; the third paragraph can deal with the methodology, procedures and sample (subjects) and the fourth must consider the research output. Generally an executive summary need not be more than **two hundred words**. A summary provides a reader with **a clear understanding of the research problem and the process put in place to address it**. It also outlines the modalities of the research process in general. The Executive Summary must **not exceed** one page.

3.3 Literature Review

Prior to any scientific investigation a researcher ought to commit some time to an **investigation of the background literature** related to the problem to be researched. **Failure to do this may result in undue duplication** of research ideas and plans; which merely commits scarce resources to a project that will not bear valuable results for the researcher, the scientific discipline in which it is located, or the broader science community. An investigation of the background information has to be more than surface-based as it **helps the researcher to identify the gaps in existing knowledge on the subject of research**, and in the process, helps the researcher to modify his/her research focus accordingly.

A literature review ought to exhaust the majority of sources which are available on the subject of research and aim to clearly address:

- **What is already known about the research problem?**
- **What are the gaps in the present body of knowledge?**
- **Where and how does the proposed research fit into this picture?**
- **Is the research not an unnecessary duplication?**

A literature review which falls short of these concerns only solidifies the evaluator's suspicion that the researcher did not carry out satisfactory background investigation on the chosen research problem and therefore lacks a conclusive understanding of the key issues around it.

3.4 Aims

This section outlines the major **aims and objectives** of research. The question of research aims is very sensitive as researchers often do not **distinguish between basic research aims and those which are related to broader social concerns**. It is necessary to distinguish between different layers of research aims:

- **Primary aim**: what does the research aim to do? Is it *descriptive, exploratory, explanatory,* or *predictive*?
- **Scientific aim**: what significance does the research bear for scientific knowledge or literature on the subject to be researched? Will it open new debates, new frontiers of knowledge, or alter the focus of present literature on the subject? Is it not an unnecessary duplication or a waste of scarce resources? In short the scientific merits of the study are explored here.
- **Broader Aim**: does the envisaged research have any potential to contribute to social development or policy formulation around topical issues in the broader society? If there is any such potential, the proposal must present it in terms which are realistic and not overstated.

Do not use these subheadings when writing out the aims of the study.

3.5 Methodology

Reference is made to **methods** which will be used for **data collection** and **analysis**, research **sample**, research **procedure**, and the overall research approach. **Data analysis** must also be considered in this section.

Critical questions in this section relate to the following:

- **What method(s) will be utilised to collect and to analyse data?**
- **Why is this method(s) the most appropriate for the planned research?**
- **What is the procedure to be followed for data collection and analysis (and why)?**
- **Do(es) the chosen method(s) correspond(s) with the envisaged research aims?**

In visualising a research sample a researcher should address the following critical questions:

- **Who are the research participants?**
- **What characteristics of the overall population do they represent?**
- **How (sampling method and procedure) are they targeted?**

- **What arrangements need to be made to gain access to research participants?**
- **Are these arrangements feasible?**
- **What amount of the participant's time will the research require?**
- **Is this amount of time practical and realistic?**

3.6 Data analysis

Data analysis as advised by professional statisticians is often necessary and should be included in the proposal. Information of the statistician consulted and the date of consultation should also be included. Analysis of data and specific statistical methodology and tests must be described.

3.7 Ethical considerations

The Faculty Academic Ethics Committee will review each proposal based on the following ethical issues:

- **Scientific design and conduct of the study**
- **Recruitment of research participants**
- **Care and protection of research participants (confidentiality / consent)**
- **Community considerations**

Special consideration will be given to the right to **privacy, confidentiality and anonymity** of research participants. The right to **equality, justice**, human **dignity**/life and protection against harm must be ensured. The participants' right to **freedom of choice, expression and access to information** as well as the rights of the **community and science community** must be considered. Where human subjects are involved in research projects, **informed consent letters** must be included in the proposal as an addendum.

3.8 Possible outcomes

This section maps out what the anticipated **research outcomes and value** of the study will be. The anticipated output of a research project **is integral to any process that evaluates the research plan and design**. Essentially, a research proposal outlines a process which will be followed in pursuit of particular research **outputs or end-products**.

To clarify these outputs the researcher has to ask:

- **What is (are) the research output(s)?**
- **Do the available resources tally with the expected output?**
- **Can the output be attained within the set time frame?**

The nature of the anticipated output contains essential information concerning **both the research planning phase**, and the **resources which will be required** to fulfil the aims of research. Examples of research output include *policy documents, research reports* and *dissertations, publications* and *conference papers*.

3.9 Time and Cost Budget

A convincing and detailed account of **how long** the entire research process will last is presented with emphasis on **tasks** which are set to be **accomplished at specific points** of the research calendar.

Milestones and performance indicators bear significance in this respect as they signal achievement or non-achievement of set goals. The **resources** which are required to see the entire research process through are detailed in this part of the proposal. Underestimating the required resources may have the effect of undermining some crucial parts of the envisaged research plan. It is advised that this section be done in table form.

3.10 References

Only **sources to which the proposal document refers** are listed in this section. A technical factor in this regard relates to the inclusion of sources which are not referred to in the proposal, sources which the author may nonetheless have read in preparation of the proposal. The latter do not form part of the proposal reference sections.

3.11 Appendices

Appendices serve the purpose of providing **further information** which would not make for fluent reading if they were included in the main body of the proposal. These include, for example, **questionnaires**, **permission letters, covering letters**, **consent forms, copyright permission** and so forth.

4. ADDITIONS

Be reminded that the **HDC-1** registration form for post-graduate studies must accompany all proposals. A **report** from a **statistician** might also be required by the **Higher Degrees Committee**. In addition all research proposals must receive ethical clearance from the **Faculty Academic Ethics Committee.** For the **Higher Degrees Committee**, **two copies** of the proposal and for the **Faculty Academic Ethics Committee three copies** of the complete proposal must be handed in to the Faculty Research Administrator, Ms. Helen Selolo, room 7227, Johan Orr Building, Doornfontein Campus, Telephone 406 2660.