DURBAN UNIVERSITY of TECHNOLOGY

Research Capacity Building Workshop

15. Presenting data

Survey – Feedback on Workshops

Please could you participate in the Survey which will be administered in this session to obtain feedback on the Friday Workshop Programme:

http://gravitysa.co.za/surveys/

Even if you have attended only a few sessions, please give us feedback. There are no "right answers", and we would really like to know what you think: this will help us to improve or supplement the sessions as and where necessary.

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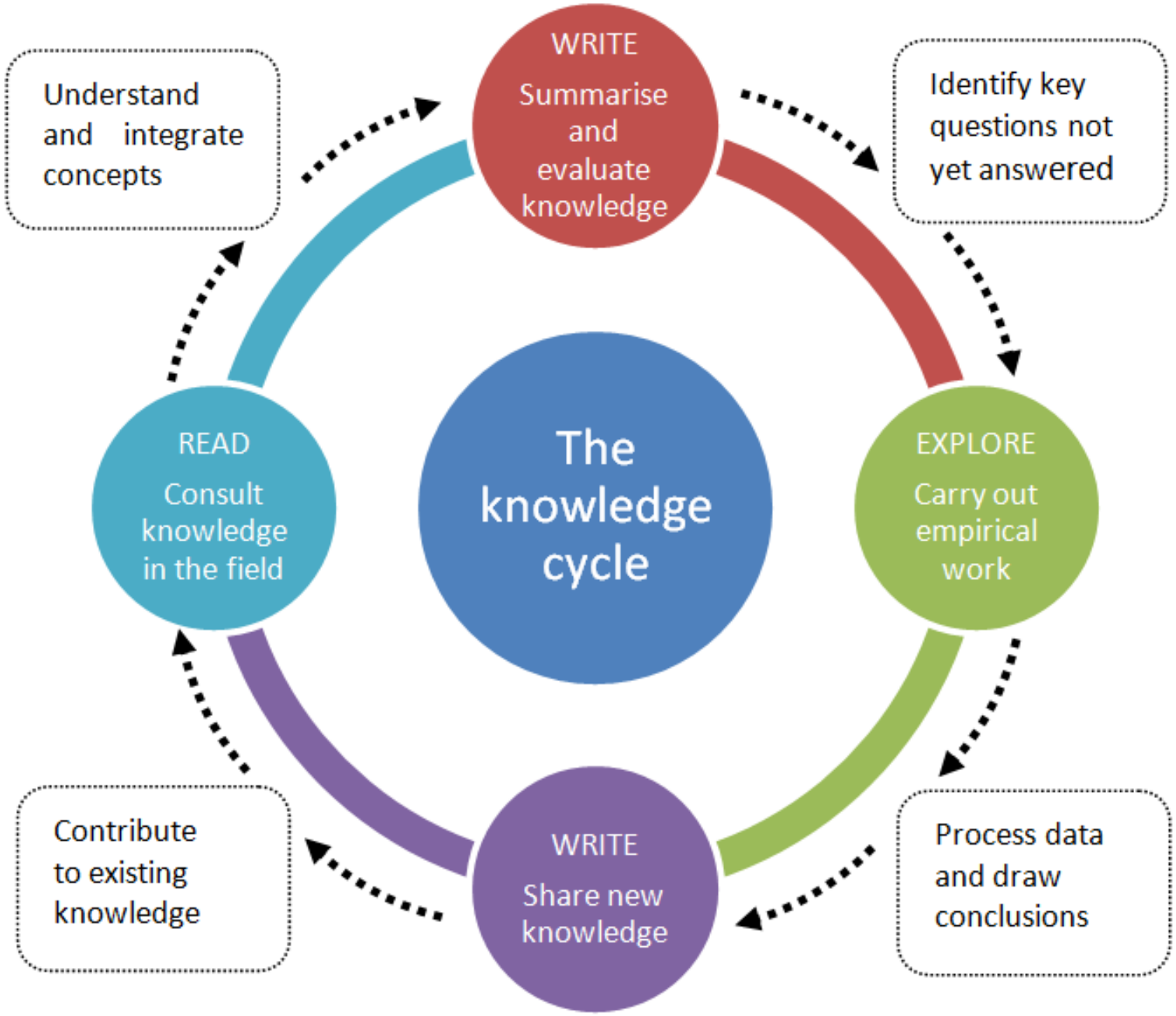
WRITE
Summarise and evaluate knowledge
Identify key questions not yet answered
EXPLORE
Carry out empirical work
Process data and draw conclusions
WRITE
Share new knowledge
Contribute to existing knowledge
READ
Consult knowledge in the field
Understand and integrate concepts
The knowledge cycle

WE ARE HERE

Today's Programme

Methods of presenting data will be covered, including use of the following:

- bullets
- tables
- graphs
- figures
- appendices

This session will include where to position the data presented: what to select for the chapters and what to put in Appendices. Various options for graphics and their advantages/disadvantages will be discussed, as well as "quick fix" screen dump options.

The importance of presentation

No matter how well the data gathering has turned out and how good you data is, presentation is a very important part of the results.

The examiners (and other readers) did not see you gather the data and cannot read your mind: they can see only what you put on the pages of your thesis.

Put too much, and you have information overload; put too little, and you are suspected of either not doing the work or fudging the results.

If you do not present your results clearly, they will see you as confused; even worse, *they* will become confused.

How do you present the data?

- What to include, what to leave out?
- What to put in an Appendix?

These are not just research problems, they are *writing* problems.

Good writers have learned:

- How to pre-empt what they are going to say
- How to present information effectively
- How to sum up afterwards

They also know how to *vary* their approach.

Data is *evidence*

Data was gathered *as evidence to make your case*, to answer your research questions, and must not only be recorded and summarised (usually in an Appendix), but also *must be used as evidence in your thesis argument*.

The Examiners are not going to "join the dots" and figure out how your evidence supports your argument: *you* must make the connection clear for the Examiners. Presentation of data must be made in a way which proves your point.

Two aspects of data as evidence

Recording:
Recorded data (e.g. transcripts, figures, mass details) is usually kept in an Appendix.

Argument:
Data used as part of your thesis argument is usually selected for use in your thesis body text (i.e. only excerpts appear).

Where to position the data presented

Transcripts of data should go in an Appendix: selected extracts should go in the chapters *to be used in your argument*.

Visual communication of data

Visual communication is very important, but remember:

Every figure, table and/or illustration in a thesis must be mentioned in the text, and is not just there to brighten up the page.

N.B. The way you represent your data visually can make or break your case: visuals are not for cosmetic purposes!

Placement of figures and tables

The figure or table should be placed as soon as possible after the first reference to it in the text. In order to avoid unsightly gaps, this placement may not always be precise.

As the graphics can - and do - move around considerably as you format the final layout of your thesis text, you should *never* refer to "the figure above" or "the table below": always refer to it by its *label*: "Figure 2.3" or "Table 5.1".

The Challenger Disaster

Michael Friendly, of *DataVis.ca*:

One virtue of a good graphical display is to allow us to see patterns, trends, or other structures which would otherwise be concealed in another form of display. It may be heartbreaking to find out that some important information was there, but the graph maker missed it. The story behind the *Challenger Disaster* is perhaps the most poignant missed opportunity in the history of statistical graphics. But such graphical failures often provide useful lessons.

See http://www.datavis.ca/gallery/missed.php

Conventions for figures, tables and illustrations

Some conventions regarding figures, tables and illustrations:

- These are usually centralised on the page.
- Captions for figures go *under* the figure; captions for tables go *above* the table.
- Figures and tables are labelled independently, according to their order in a *chapter*.

Layout tips for MSWord

To stop graphics jumping around on the page, either:

set them “in line with text” and treat graphics as text

or

place them within tables (you can make the table lines invisible).

“Quick fix” screen dumps

MSOffice graphics (tables, shapes, graphs) are often not stable when inserted into a thesis text. To stabilise, do a “screen dump” and “insert as a picture”, as follows:

Tab + Print Screen copies the graphic from the page.

Open a blank PowerPoint page.

Control + V pastes the graphic on the PowerPoint page.

Use “Format” and “crop” to cut off unwanted edges.

Right click, and “Save as picture” (choose .jpg option).

Insert the picture into thesis page in place of the original table, shape, graph, etc. (N.B. *Keep a copy of the original!)*

Bullets

These work best when you want to pull out some main points and highlight them. Don't use them too often, and don't have overlong bullet entries (use paragraphs, rather).

Tables

Tables are excellent for quickly and clearly showing complex *relationships* between different factors or measurements.

Text in tables should be *single spaced* in the thesis body.

Graphs

Ensure that an appropriate type of graph is chosen in order to display the results clearly, e.g.

- Line graph
- Bar graph
- Gant graph
- Histogram
- Pie chart

Figures

Figures can be used to give a holistic view of a complex abstract concept.

However, the figure must be *explained* in the text.

More detailed notes could be added in an Appendix.

This means that the reader can absorb the information both visually and verbally. Figures also break up long stretches of verbal text, which can be exhausting to read.

Appendices

Appendices should not be used as “dumping grounds” for text which does not fit into the body of the thesis.

Raw data can be displayed (but neatly) in Appendices.

Additional notes or excerpts which provide relevant and interesting information, but which would break the flow of the thesis argument, should be put in Appendices.

Instructions (e.g. how to load software accompanying the thesis) can also be put in Appendices.

CDs with data should be labelled as Appendices.

Self study data

The bodies of self study theses tend to be shorter than the norm for a doctorate (i.e. under 150 pages).

In a self study, while extracts are used in the thesis text, a huge amount of evidence is contained in the Appendices. This is because the evidence not only exemplifies the nature and scope of the self study: it also validates the claims made in it.

Self study researchers may use the term “Illustration” instead of “Figure” or “Table”, because the sheer variety of evidence may make categorisation difficult.