Introduction to academic research and writing

David M. Kennedy, PhD
Director, Teaching and Learning Centre
Associate Professor, CDS

21st Century learning means

- Preparing for jobs that may not exist yet
- That will use technologies yet to be invented
- To solve problems we don't know are problems
- Learning to learn, unlearn, re-learn
- Using all of the tools available

http://www.developmentcentralonline.com/briefingpage.php

Outline

- You will learn more about:
  - two of the key research paradigms
  - qualitative and quantitative studies
  - the nature of knowledge and the need for scholarly approaches
  - undertaking a literature review, including free online tools that you can use
  - developing an argument, adopting a position and developing a research plan
  - Plagiarism

Information ≠ Knowledge

- Total Information available by – 2010/15
  - Predicted to double every 72 hours!
- Learning to learn is crucial

http://www.themonitor.com/articles/2008/03/28/tech/tech20090325.html

Learning Outcomes

- Evidence of an understanding the fundamental steps involved in scholarly research
- Evidence of how to get started with a literature review
- Able to give an example of plagiarism
  - able to give an example of how to avoid plagiarism

Information is (almost) free!

- There are > 500,000,000 searches on Google
  - EACH DAY
- But is the information found:
  - Valid?
  - Accurate?
  - Reasonable?
Knowledge is the tip of the information iceberg

Learning about research

- KWL Model
  - What do you already KNOW?
  - WHAT do you want to know?
  - What have you LEARNT?

For information about the KWL model see
http://www.nccel.org/pdfs/assessstudents/learning/kwel.html and
http://www.education.unr.edu/psets/reading/klw/default.html

KWL model

<table>
<thead>
<tr>
<th>K</th>
<th>W</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>What I KNOW</td>
<td>What I WANT to Know</td>
<td>What I LEARNED</td>
</tr>
</tbody>
</table>

Activity

- Using the KWL model
  - describe what you know about research and what research is
  - try define what you would like to know
  - leave space for later: to modify what you have said

Quiz 1

- What are most rigorous sources of knowledge?
  A. Books or eBooks
  B. Magazines
  C. Conference papers
  D. Journals or eJournals
  E. Newspapers
  F. Internet

Sources of knowledge I

- Experience
  - Naive beliefs and potential misconceptions
    - e.g. - the world is flat, the earth is the centre of the universe,
      beliefs about disease before the microscope was developed
  - Reasoning
    - Deductive logic – a conclusion from a set of premises
      (as in mathematics)
    - Inductive reasoning – from the particular to the general
Sources of knowledge II

- **(OLD) Expert opinion**
  - it can be very very wrong
  - e.g., the cause of stomach ulcers

The two scientists have described how they were initially shunned for insisting stomach ulcers were caused by a bacterium, not stress. Dr. Marshall finally swallowed the bacterium himself to prove his point. (BBC News, 4 Oct. 2005)

Research in the Social Sciences

- **Research**
  - "Research is a human activity based on intellectual investigation and aimed at discovering, interpreting, and revising human knowledge on different aspects of the world."
  - Wikipedia
  - 'Scholarly or scientific investigation or inquiry'
  - dictionary

Research is not ...

- Research is not just information gathering.
  - A student going to the library and reading information on African Elephants is not research.
- Research is not rearranging data.
  - A student writing a report on behavior of pendulums is not research.
- Research is not a sales pitch.
  - A new improved toothpaste developed after years of research is rarely, if ever, real research.

Definition of research

- "A studious inquiry or examination, especially a critical investigation or experimentation having for its aim the discovery of new facts and their correct interpretation the revision of accepted conclusions, theories, or laws in the light of new discovered facts or the practical application of such conclusions, theories or laws."
  - dictionary

Research problems

- Need to ask useful, non-trivial questions
- Must have a clear focus
- Must be stated in as few words as possible
- Should have only ONE question per statement
- Should say what the research means
- May contain sub themes
- Should be ethical and moral

Types of research

- **Basic research**
  - generating new fundamental knowledge
    - (solutions to problems may take a long time or not be recognised when discovered)
- **Applied research**
  - focused on answering practical questions (solutions are much faster, usually)
Types of Research II

- Evaluation research
  - formative evaluation
    - improvement - (but can be for grades/marks)
  - summative evaluation
    - making judgments
- Action research
  - looking at practice - the researcher can be part of the process
- Critical theory
  - looks at inequalities, gender, race, ethnicity etc.

Types of research III

- The Scientific Method
  - Deductive
    - State a hypothesis
    - Generate data to test the hypothesis
    - Accept or reject the hypothesis
  - Inductive
    - Observe carefully (the thing you are interested in)
    - Search for patterns
    - Make generalisations about observed patterns

Paradigm + Impact on research methodology

- Paradigm
  - which one do you subscribe to?
- Reality
  - how do you believe reality can be looked at?
- Social factors
  - what place does culture play in research?
- Objectivity vs subjectivity
  - is objectivity something that can be achieved?
- Tools
  - what kinds of tools can be employed?

Example I

Investigation of Social Media Marketing: How Does the Hotel Industry in Hong Kong Perform in Marketing on Social Media Websites?

- How would you do this research?

Activity

- Using the KWL model
  - How would you do this?
  - Think about data collection, issues of analysis, types of data
- Leave space for later: to modify what you have said

Possible approaches

- Positivist research design: Propose hypothesis for issue - social media is poorly used
  - collect data of actual use, what media, how used ...  
  - count numbers and types of social media used
  - look at data from a search engine, google analytics
  - collect samples of social media use
- Interpretivist approach
  - interview key hotel staff responsible for social media
  - analyse social media logs and look for patterns
  - seek to draw conclusions about causal factors
Emphasis of quantitative research I

<table>
<thead>
<tr>
<th>Emphasis</th>
<th>Qualitative research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific method</td>
<td>Deductive or 'top-down'</td>
</tr>
<tr>
<td>The researcher tests hypotheses</td>
<td></td>
</tr>
<tr>
<td>and theory with data</td>
<td></td>
</tr>
<tr>
<td>View of human behaviour</td>
<td>Behaviour is regular and predictable</td>
</tr>
<tr>
<td>Most common research objectives</td>
<td>Description, explanation and prediction</td>
</tr>
<tr>
<td>Focus</td>
<td>Narrow-angle lens, testing specific hypothesis</td>
</tr>
<tr>
<td>Nature of observation</td>
<td>Attempt to study behaviour under controlled conditions</td>
</tr>
</tbody>
</table>

Emphasis of quantitative research II

<table>
<thead>
<tr>
<th>Emphasis</th>
<th>Qualitative research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form of data collected</td>
<td>Collect quantitative data based upon precise measurement using structured and validated data collection instruments (e.g., closed-ended items, rating scales (Likert), behavioural responses)</td>
</tr>
<tr>
<td>Nature of data</td>
<td>Variables</td>
</tr>
<tr>
<td>Data analysis</td>
<td>Identify statistical relationships</td>
</tr>
<tr>
<td>Results</td>
<td>Generalisable findings</td>
</tr>
<tr>
<td>Form of final report</td>
<td>Statistical report (e.g., with correlations, comparisons of means, and reporting of statistical findings)</td>
</tr>
</tbody>
</table>

Tools I

- As Albert Einstein said,
  "Computers are incredibly fast, accurate, and stupid. Human beings are incredibly slow, inaccurate, and brilliant. Together they are powerful beyond imagination."

![Image of Albert Einstein](http://example.com/albert-einstein.jpg)

Tools II

- Computers can help
  - organize, picture and store data collected
  - record thoughts, find ways stating ideas, and/or provide graphical representations
  - provide an appealing format for sharing information.
- Computers cannot
  - interpret data, make connections or determine meaning: humans can
- Computer hardware, software and peripherals are just tools.
Emphasis of qualitative research

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Data analysis</td>
<td>Search for patterns, themes and holistic features (grounded research)</td>
</tr>
<tr>
<td>Results</td>
<td>Particularistic findings. Representation of insider (i.e., emic) viewpoint. Present multiple perspectives</td>
</tr>
<tr>
<td>Form of final report</td>
<td>Narrative report with contextual description and direct quotations from research participants. Research MUST articulate the social 'lens' through which the data is examined and reported.</td>
</tr>
</tbody>
</table>

Triangulation - two varieties

- Methodological triangulation
  - use more than one method
  - semi-structured interviews
  - observations of behaviour
  - questionnaires
- Sources triangulation
  - cross-checking of sources of information
  - cross-checking of interpretations of information
  - information derived at different times by different people
  - e.g., the Head librarian and the library staff
- Leads to reliability and validity

So what did they do?

- Literature review - developed a social media check-list
- Developed a temporal (time-based) evaluation criteria
  - attracting, engaging, retaining, learning, relating
  - Representative sampling - e.g., brand/size
  - Looking at each social media site
  - Check for consistency - different sites
  - Frequency in the literature of SM sites
  - Interpretation of findings - recommendations

Points of comparison I

<table>
<thead>
<tr>
<th>Point of comparison</th>
<th>Qualitative research</th>
<th>Quantitative research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus of research</td>
<td>Quality (nature, essence)</td>
<td>Quantity (how much, how many)</td>
</tr>
<tr>
<td>Philosophical roots</td>
<td>Phenomenology, symbolic interaction</td>
<td>Positivism, logical empiricism</td>
</tr>
<tr>
<td>Associated phrases</td>
<td>Fieldwork, ethnographic, etnographic, grounded, subjective</td>
<td>Experimental, empirical, statistical</td>
</tr>
<tr>
<td>Goal of investigation</td>
<td>Understanding, description, discovery, hypothesis generating</td>
<td>Predictive, control, description, confirmation, hypothesis testing</td>
</tr>
</tbody>
</table>

Points of comparison II

<table>
<thead>
<tr>
<th>Point of comparison</th>
<th>Qualitative research</th>
<th>Quantitative research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design characteristics</td>
<td>Flexible, evolving, emergent</td>
<td>Predetermined, structured</td>
</tr>
<tr>
<td>Setting</td>
<td>Natural, familiar</td>
<td>Unfamiliar, artificial</td>
</tr>
<tr>
<td>Sample</td>
<td>Small, non random, theoretical</td>
<td>Large, random, representative</td>
</tr>
<tr>
<td>Data generation</td>
<td>Researcher as primary instrument, interviews, observations</td>
<td>Manipulate instruments (scales, tests, surveys, questionnaires)</td>
</tr>
<tr>
<td>Mode of analysis</td>
<td>Inductive (by researcher)</td>
<td>Deductive (by statistical methods)</td>
</tr>
<tr>
<td>Findings</td>
<td>Comprehensive, holistic, expensive</td>
<td>Precise, narrow, reductionist</td>
</tr>
</tbody>
</table>
Framing the research Q1

Qualitative and quantitative
- The two paradigms answer different types of questions. Quantitative is better (arguably) at questions about what, who, how much, how many, where and when.
- However, qualitative research seems more suited to questions about why and how, often more complicated questions to ask, especially when people are involved.

Framing the research Q2

- Write down your broad area of interest.
- Write down a specific sub-topic in this broad area which you find of interest. Then try to formulate a question based upon this
- Create a list of 4 to 8 very specific questions that lie within the sub-topic, but NOT outside of it
- Leave it for a few days and then look at it again

Research planning

How do I structure literature?

- Lots of ways
  - On your PC – VUE (see
    - http://vue.tufts.edu/
  - MindMeister
    - (create yourself an account)
    - http://www.mindmeister.com/
    - Create one – invite a friend

Quiz 2

- In any research study, you need to do a Literature Review. What is a literature review for? (more than one answer possible)

A. To show that I have read a lot
B. To establish a framework for my research
C. To demonstrate my knowledge of the field
D. To help me to understand my field of study
Literature review I

- You need data to ensure that you have a broad understanding
- You should know what has been occupying members of your own chosen major
- Don't try to do too much - focus on an area
  - go from the general to the particular
  - try to reach a balance between breadth and sufficient depth
  - look for patterns (scan the titles/abstracts)
  - use appropriate referencing and Zotero

Literature review II

- Read the literature from a variety of sources
  - internet, library shelves, ebooks
- Use mind-mapping or concept mapping techniques to form an understanding of key issues
- Identify how the key issues relate to each other
- Review the literature critically. Look for:
  - different methods (quantitative/qualitative)
  - contradictions in conclusions about similar research
  - perceived limitations of particular research
  - common patterns
  - paraphrase rather than quote
- Don't be afraid to draw your own conclusions

Selecting articles

- What do I read?
  - Relevant, Recent, Readable
- Record
  - Keep notes in Zotero
  - Bookmarks – Del.icio.us or Diigo
- Patterns
  - Look for patterns, notes, concept/mind maps
- Paraphrase rather than copy-and-paste
  - if you do, use "..." and record the page number
- Access – VPN at LN

Critical review I

- Introduction
  - Did the paper (authors) say what the study was undertaken?
  - Were the aims well supported by the background information provided?
  - Were the methods used in the study clear (i.e., could you repeat the study)

Critical review II

- Did the authors acknowledge any potential problems or limitation with the method used?
- Have the authors specified the statistical procedures used and why?
- Are the statistical methods used appropriate?
- Do the results obtained make sense?
- Is the data presented clearly?

Critical review III

- Are the Table legends clear?
- Were the objectives of the study met?
- Is the discussion of results congruent with the available information?
- Are the conclusions speculation or reasonable?
- Is the data interpreted correctly?
- Are the limitations of the study stated?
Plagiarism I

- Lingnan University guidelines
  - http://www Lingnan.hk/info/for/students/orientation/academic-integrity
- "How Can Students Avoid Plagiarism?"
  - To avoid plagiarism, you must give credit whenever you use another person's ideas, opinion, or theory;
  - any facts, statistics, graphs, drawings—any pieces of information—that are not common knowledge;
  - quotations of another person's actual spoken or written words; or paraphrase of another person's spoken or written words."

Plagiarism II

- Put simply, plagiarism is copying the work of another person without proper acknowledgement. There are two parts in the definition: copying and the absence of proper acknowledgement. As a result, it gives an impression to an ordinary reader that the work is the original work of the author when in fact it was copied from some others' work. The idea underlying plagiarism is very simple: if you appropriate the work of another person, you should give proper recognition to that person.
  
  http://www.bcu.hku/plagiarism/page2s.html

Plagiarism III

- Plagiarism is defined as the unacknowledged use, as one's own, of work of another person, whether or not such work has been published.
  
  http://www.bcu.hku/plagiarism/introduction.html

Plagiarism IV

- Plagiarism is an attempt to pass off the work of others (in particular the writing of others) as one's own.
- The most obvious and blatant type of plagiarism is copying whole articles, sections, paragraphs or whole sentences from other publications without acknowledgement. This is clearly unacceptable.
  
  http://www.cuhk.edu.hk/policy/academic-integrity.html

Plagiarism V

- However, even the use of a few words or paraphrasing (without actually copying any words at all) may constitute plagiarism if the source is not acknowledged. Students sometimes unintentionally plagiarize because they are not aware of the very stringent rules that apply.
- If material is taken from a source, there should be proper quotes and acknowledgements.
  
  http://www.cuhk.edu.hk/policy/academic-integrity.html
Avoid plagiarism by

- Summarising
- Quoting
- Paraphrasing
- Cite your sources in the text and bibliography

You will then gain credit for good academic use of the literature - that is, a better grade.

What is a direct quotation?

- It is the words of another person as they appeared in the original source
- Use them for important points
- Be careful not to overuse quotations
- Remember to include a reference to the source

Short quotations

If your quote is less than 40 words, put it in quotation marks in your own text.

For example:

Listening is a skill. As Marie Stuttard (1997, p. 73) remarks, "We all recognize those who do not listen. They seem insensitive to what others are doing. For example, they may interrupt people rudely".

Longer quotations

If your quote is more than 40 words, leave out the quotation marks, but start it on a new line and indent everything.

For example:

Stuttard (1997, p. 73) emphasizes that “Even in business, the ability to listen is vital to success. A boss who doesn’t listen will not get the best out of an employee. A colleague who doesn’t listen will not contribute the right qualities to your association. A client who doesn’t listen will be unaware of what you’re telling them.”

Quiz 4

- You have just read a passage and rephrased it in your own words.

Mobile devices can be used anytime/anyplace and may therefore create a new paradigm predicated on availability (ubiquitous) and the capabilities of computers (function).

A. NO  B. YES  C. Not sure

Citations

- Experts don’t know everything
- Experts know – they don’t know
- Experts cite original works

- You should cite the experts
- Citing experts makes YOU look GOOD!

http://www.occ.edu/skill/biblio/citebooks_xt.html
Learn your citation style

- Harvard Style

- Anglia Ruskin University (UK)
  - http://libweb.anglia.ac.uk/referencing/harvard.htm?harvard_id=52#52

Turnitin I

- "Turnitin's Originality Checking ensures originality, as well as use of proper citation."
- It can be one of two things
  - A plagiarism detector
  - A means of learning how to write and cite correctly in an academic setting

Turnitin II

- When Turnitin analyses the text in an assignment it provides you with a similarity index. Any similarity index, excluding quotes and bibliography (it is to be expected that your bibliography will be the same as others) over 20% should be viewed with some concern

Similarity: 27%
exclude quoted
exclude bibliography

Turnitin III

- The report may highlight some general terms which can be ignored

Turnitin IV

- BUT - when plagiarism is present - deliberate OR accidental, the source and quantity (words) related to the essay are shown!

Turnitin V

- The green text is plagiarised!
- But the brown text says the two texts are from different sources.

A standard electronic health record (EHR) and incorporates national health information infrastructure require the use of uniform health information standards, including a common medical language. These must be collected and maintained in a standardized format, using uniform definitions, in order to test data within on the system or share health information between systems. The lack of standards has been a key barrier to electronic connectivity in healthcare.

(Institute of Electrical and Electronics Engineers, 2006) However, it is like
Write correctly – write well - do well

- Copy a few or lots of people = FAIL
- Quote, paraphrase, acknowledge and CITE = SUCCESS!

- Being scholarly is
  - Taking a position
  - Making an argument
  - Being rigorous (no waffle!)
  - Citing the experts

Student declaration

- Student declaration against Academic Dishonest Practice
  - http://www.ln.edu.hk/resources/get/66664cd4df6246c7266266726c7bf66e2b2b4f2ceb
- Your character
  - a graduate attribute/ outcome
- Your university record

Conclusions

- Start early
  - Think about your capstone / research project
  - Talk to your supervisor
  - Have a plan – can I DO THIS?
  - Invite your supervisor to view your mind map (lit)
  - Write a little – EVERY DAY
  - Keep a diary of activity
  - Be methodical
  - Manage your supervisor

Last question

- For my group, the most useful parts of this seminar were:
  A. The overview of types of research
  B. Advice about literature reviews
  C. Using a real example of research in Hong Kong
  D. How to avoid plagiarism
  E. All of the above

David M. Kennedy, PhD
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