**Research Methodology**

**Methodologies**

***Quantitative***

* Collects numerical data that can be quantified
* Focuses on measuring, collecting, drawing relationships between facts via statistical analysis and experimentation
* Questionnaires, interviews, experiments
* Objective, less reliable, less subject to bias

***Quantitative***

* Concerned with collecting information that doesn’t involve numbers
* Observations, case studies, interviews, questionnaires, documents
* Assesses individual opinions, feelings about specific situation
* Detailed information about beliefs, feelings, values, attitudes
* Generally more subjective
* More likely to be biased by researcher’s own values and interpretations

**Conducting Research**

***Formulating a research proposal***

* Identifying general topic area, do background reading
* Conduct research using internet, books, people
* Define research topic by developing **hypothesis (question or statement researcher can prove/disprove)**
* Research proposal/plan essential for over viewing project
* Clear proposal outlines:
* what is to be done
* how it is to be done
* when it will be done
* Once completed, research proposal should provide clear direction
* Changes may need to be made

***Research methodology***

**Interview**

* Typically minimum of 30 minutes
* Might last up to 1 ½ hours
* More than one person can be interviewed at once
* Interview checklist:
  1. clarify objectives
  2. overall structure
  3. specific structure
  4. closure

**Questionnaire**

* Formally designed schedule of questions
* Depends on people’s memory and honesty
* Generally only involve sample of population to be studied
* Three types of survey:
  1. public opinion survey, eg. general community
  2. user profile, eg. users of a park
  3. group profile, eg. teenagers

**Case study**

* Collection and presentation of detailed information about a particular participant or small group
* Frequently including accounts of subjects themselves
* Looks intensively at an individual or small participant pool
* Draws conclusions only about that participant or group and only in that specific context
* Emphasis placed on exploration and description

**Observation**

* Involves watching and recording what is being observed
* Two types of observation:
  1. participant observation – involves researcher talking part in group and observing from within

Advantage:

* Gives researcher better access to group, therefore gaining more knowledge and great disclosure from members

Disadvantages:

* Research tends to be subjective and biased
* Group may not act naturally
* Researcher’s presence and actions may influence group’s dynamics
  1. Non Participant Observation – observing without participation

Advantages:

* Researcher more objective
* Easier to record what is seen

Disadvantages:

* Group members actions influenced by fact that they know they’re being observed
* Researcher may inadvertently interact with group
* Time consuming, requires patience

**Literature review**

* Research variety of sources – journals, books, websites, etc to gain understanding of topic
* Compare conflicting ideas/theories on topic
* Reliable sources only
* Page dedicated to list of referenced definitions
* Sub headings

***Collecting and recording data***

* Two stages:
  1. conducting primary research or main data collection
  2. relevant secondary data
* Information needs to be recorded and referenced

***Analysing and interpreting data***

* Involves discussion of data
* Point to significance of information in light of the questions posed
* Analysis involves:
  + - identifying underlying principles of data and how they apply
    - validity of the measures
    - reliability of the data
    - explanation of inconsistencies
    - implications of the data and limitations of the research process
* When analysing, researcher must compare variables
* Qualitative data best reported in text or prose format
* Quantitative data usually reported in table or graph format

**Presenting Data**

***Graphs, tables, presenting key data***

* Visual representation helps reader to get a picture of what research is showing
* Tables list numerical data in clearly labelled columns – allows for comparisons of many factors or samples
* Pie graphs are circular graphs that:
  + - compare two or more proportions of the whole
    - shaded sectors allow for quick identification of respective proportions
* Line graphs present changes over time or trends

***Report writing and presentation***

* Title page
* Contents page
* Abstract
* Acknowledgements
* Body of report
* Bibliography
* Appendices

***Bibliography***

* Name of person(s) who generated the work
* Date of production of most recent edition
* Title of work in italics. For book titles, single quotation marks for an article or program
* Place of production (country, city or state)
* Name of publisher (do not include company, etc)

***Appendix***

* Included at end of report
* Contain material relevant to research, but not appropriate for body of report
* Appendix may be very long and interfere by placing it in body of report
* Each material should be numbered and titled
* Not necessary to include questionnaire responses – they are reported in results and analysis and discussion sections

**Sources Of Data**

***People/individuals***

* People – major source of primary data
* Teachers, experts, managers, specialists
* Family can provide support but not to be used part of sample group or interview subjects

***Organisations/groups***

* Specialist services
* Government and private support networks
* Politicians
* Police officers
* Medical and health authorities
* Special interest groups

***Electronic sources***

* Internet prime area referred to in electronic sources
* Television
* Radio

***Libraries***

* Access to both electronically and print resources
* Libraries provide assistance
* Librarians at schools, TAFE, universities and community and state libraries can provide assistance
* Past newspaper articles on specific topics

***Print sources***

* Journals, newspapers, encyclopaedias
* Important to assess currency and authority

**Research Terminology**

***Bias***

* Introduced to sample if it doesn’t fully represent all groups in population in appropriate portions

***Hypothesis/question***

* Question or statement researcher can prove/disprove

***Reliability***

* Refers to method which, if used by other researchers under similar conditions, will lead to same/very similar results
* Research needs to be systematic and organised
* Accurate representation of population being studied

***Sampling***

* Selecting representative range of people from study
* Consider size of sample group – larger the sample, the better to achieve wider representation of population

***Validity***

* Refers to how well research method measures what it’s supposed to measure
* Increased when combinations of methods used
* Dependent on factual data and truths, reliability of data and accuracy in interpretation of data collected
* Must have background knowledge of topic in order to make informed assumptions and generalisations, rather than relying on value judgements or biased views

**Ethics in Research**

***Privacy***

* Privacy of participants should be respected
* Should gain consent and permission of all participants before commencement
* Identity may be disguised is requested

***Respect for Subjects of Research***

* Safety and welfare of participates needs to be considered
* Respect, regardless of their responses
* Questions should not be too personal or offensive

***Integrity of Researcher***

* Present findings without bias
* Report findings should be truthful
* Participants should receive accurate information regarding nature of research and how the findings will be used and accessed

***Integrity of Data***

* Findings must be accurate and reflective of research
* Falsifying research findings and plagiarism are forms of cheating

***HSC Regulations***

* Must submit your own work (All Your Own Work)