Snapshot Research

Snapshot *Noun* [c] (UNDERSTANDING)

A piece of information or short description that gives an understanding of a situation at a particular time

A plain language guide to research terms:

A guide to interpreting research housed on the Veterans & Families Research Hub

Produced by the FiMT Research Centre

V8 June 2019

About Snapshots

The library of Snapshots already produced are designed primarily to aid understanding of the complex issues at play in relation to the Armed Forces, and to support decision-making processes by bridging the gaps between academic research, government and charitable policy, Service provision and public opinion. Snapshots are aimed at those working in policy-making and Service provision roles for the Armed Forces, and are also useful to those seeking facts, figures and informed comment to empower a more objective discussion among the wider population, including the Armed Forces community and the media. The purpose of Snapshots is to review and interpret research and policy and to set out concise, plain language summaries to facilitate understanding and perception.

The Forces in Mind Trust Research Centre are producing a range of Snapshots covering many of the main themes and topics relating to the Armed Forces and veteran community. Due to the constant process of research and policy changes, Snapshots will be updated regularly in order to maintain their relevance. They will be hosted on the Veterans & Families Research Hub. Contributions and comments are welcome via the Veterans & Families Research Hub forum.

This Research Snapshot, however, is different to the others in the Snapshot series. Consideration should be given to the fact that, due to the nature of the topic, academic language and definitions are complex to negotiate, but are an important addition to this Snapshot. Therefore this Snapshot is broken into two sections. The first section is aimed primarily at those wishing to know more about the research and funding processes. The second section has been written as a reference guide, to provide an understanding of academic terms used in journal articles or reports.

For further summaries of research terms, please also see the 'Glossary of Terms' on the Veterans & Families Research Hub (https://www.vfrhub.com/glossary-of-terms/).

Although hyperlinks are generally used in the Snapshots, the citations that have been used for the Research Snapshot have been taken predominantly from reference books and teaching materials that are unavailable online. Therefore a short reference list has been compiled at the end of this Snapshot.

Disclaimer

Whilst Snapshots are produced using recognised research processes, they are written for a lay audience. They are a collation and summary of available academic and quality grey literature (unpublished or non-commercial literature), to provide an overview of information on a particular theme or topic. Masters and PhD level research teaching materials have also been incorporated into this Snapshot. Snapshots are written to inform and to disseminate a large body of literature in an accessible way to as wide an audience as possible. They are not intended to be, and should not be regarded as, rigorous searches or systematic reviews.

About the authors of this Snapshot

Dr Linda Cooper and Kristina Fleuty are researchers at the Forces in Mind Trust Research Centre (FiMT RC). We would like to thank Professor Michael Almond (FiMT RC) and various other colleagues at Anglia Ruskin University, including the Veterans & Families Institute for Military Social Research (particularly Dr Lauren Godier-McBard and Dr Nick Caddick), also Dr Beverly Bergman and Dr Jim McDermott, for their inputs to this Snapshot.

About the Forces in Mind Trust Research Centre

The Forces in Mind Trust Research Centre was established in October 2017 within The Veterans & Families Institute for Military Social Research (VFI) at Anglia Ruskin University. The Centre curates the Veterans & Families Research Hub, which provides advice and guidance to stakeholders and produces targeted research and related outputs. The Centre is funded by the Forces in Mind Trust, which commissions research to contribute to a solid evidence base from which to inform, influence and underpin policy making and service delivery.

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SECTION ONE

Research and Funding Processes

Research is the careful study of a given subject, field, or problem, undertaken to discover facts or principles. Academic Research is generally the work of scholars at universities or other academic institutions. Research can be funded or can emerge from the work of students and academics studying to gain qualifications and whose findings are of sufficient significance to be published in academic journals. The purpose of academic research and academic writing is to communicate the findings of research studies. Academic writing, when published, helps to inform policymakers as well as providing a permanent record of findings across all aspects of the sciences.

A major difference between an academic research paper and, say, a magazine article, is the use in academic research of 'referencing.' Referencing is the practice of acknowledging in the narrative the originators of sources which have been used. To the non-academic, this use of references can appear to interrupt the flow of the narrative but it is an essential part of published research. A list of references appears at the end of academic research papers (as in this document) and a shortened version of each reference appears within the main body of the paper to support or validate statements or to provide quotes.

Sourcing Funding and Income Generation

All research conducted within academic institutions requires funding, to cover researchers' and support staff salaries, equipment, publication costs and other necessary expenses. Research may be supported internally from resources available within the academic institution, or may require an application for external funds from a sponsor such as a charity or commercial organisation.

Researchers will begin to apply for funding once they have a clear understanding of what they are trying to achieve, how they will construct their research and the time and resources needed to bring the idea to fruition. The application for research funding is extremely competitive and the success rate, no matter how good the application, is often low, due to the demands on finding income to undertake a project and the number of organisations applying for the same grants. Where funding is provided by commercial funders or charities, extreme care is needed to ensure that the research remains objective in order to avoid bias in favour of the funder. Funding caveats also exist, whereby those applying for funding need to meet inclusion and exclusion criteria of a particular 'call'.

Responding to a 'Call'

Funders often put out a 'call', asking organisations to respond to undertake a particular piece of work in a specific discipline, for example, an evaluation of a programme for veterans in the criminal justice system. The application process is usually by the submission of an Expression of Interest, followed by an Invitation to Tender.

Expression of Interest

An Expression of Interest (EOI) is a research organisation's indication that they intend to submit an application, or a proposal-in-brief, to undertake a piece of research in a particular field or discipline. The EOI will outline the benefits that the organisation believes it will bring to the funder by carrying out the work. An Invitation to Tender (ITT) will follow if the EOI fits the agenda of the funder and they are seriously considering the application for funding. Research can be from a sole organisation or institution, or collaborative work with another research team.

Invitation to Tender

An Invitation to Tender (ITT) is the first step in competitive tendering. Organisations are invited to apply for research funding that is awarded to the bid that fulfils the funder's set of requirements for a particular piece of work. The ITT will break down all aspects of the proposed research, including the approach and method

to be undertaken, timescale, a risk evaluation, staffing needs and full costings. The successful bidder will win the contract, be awarded the funding and will start work on the project shortly after the award has been granted.

Costing a Bid

The costs associated with a bid are wide and varied and will depend specifically on the type of research to be undertaken; the amount of the award of the contract (which is not always known in advance); associated items that may be needed to complete the work (such as transcription equipment); the timescale of the research; and the staffing required to bring the project to a successful conclusion, the costs of which will vary significantly, depending on experience and expertise. Non-university bodies also undertake research or reviews of specific topics and will have a different set of constraints imposed to that of an academic institution.

From a University's perspective, financial resources required for bids are broken down into costs for staff on the bid who are already employed by the university and estate costs, which pay for the infrastructure, such as electricity and heating. Costs can be directly incurred, which are met centrally by the organisation or institution and directly allocated, which are project-based. The costs that funders will pay for overheads varies significantly from funder to funder, and research organisations and institutions will have differing overhead structures. Other costs will need to be met, including staff who need to be recruited into the project, such as research assistants or colleagues at other institutions who may be named on the bid. There can also be associated costs with research, such as specialist training, conference attendance, transcription costs and, if relevant, payment of travel expenses for people who volunteer to be interviewed. Every element of a research bid needs costing and accounting for in every submission. Many universities have specialist staff who can assist researchers with the financial aspects of research.

Ethics

Research involving human or animal subjects, and some other types of research, requires approval by an Ethics Committee. Many organisations such as universities, the National Health Service (NHS) and the Ministry of Defence (MOD) have their own Ethics Committees, which often have external expert members to ensure transparency. This ensures that the rights, health and welfare of the participants have been considered; to protect the rights of the researcher to carry out their investigations have been protected; the researcher carrying out the study is insured, and the requirements of funding bodies have been met. Academic journals often require evidence of ethical approval before the publication of research papers, but not for other content, such as editorial pieces.

Research conducted on behalf of an external body may require more than one ethics approval process, for example, research conducted by a university that requires engagement with participants who are serving Armed Forces personnel (but not veterans, who are civilians) or their family members, will require Ministry of Defence Research Ethics Committee (MODREC) approval, as well as university ethics approval, before any research can begin.

Research Governance

Research governance defines the principles of health and social care research, to ensure that research is conducted to high scientific and ethical standards. Factors involving governance include the need to gain consent from the individual whom you are researching. If the individual is able to understand the expectations and outcomes of the research and give their approval to take part, this is known as informed consent. If you are researching someone who may be unable to given their own consent, such as a child, a gatekeeper can decide whether the participant is fit to take part. In the case of a child, a parent or head teacher of a school could be the gatekeeper.

Regulations exist on how organisations store, use and share data. UK businesses and organisations must comply with General Data Protection Regulation (GDPR), under the Data Protection Act 2018. GDPR is

particularly relevant when collecting personal data, to ensure that you cannot directly or indirectly identify someone from the information that has been collected. It also give the participant the right to withdraw from research and not have their data used at a later date. Electronic data needs to be held securely, on a password protected machine and with access limited to as few researchers as possible. Where data is shared, for instance in the case of two organisations working on the same piece of research, information should be shared using encrypted data.

Research should be carried out with total confidentiality between the participant and the researcher. Research should be undertaken with complete transparency, in order that the participant knows exactly for what their information will be used, what they have agreed to share with the researcher and with the right to withdraw from research without question. Only in very particular circumstances would covert or undercover research take place, but this is unusual and separate to standard research practices and guidelines. When used for publication purposes, only redacted or anonymised data should be used. Data should never be shared with anyone outside of the immediate research team.

Philanthropic Funding

Philanthropic funders are non-governmental, not-for-profit organisations where donors provide financial support into specific areas of research such as health, education, arts or culture. Recipients of philanthropic funding need to be aware of the funders' own leanings, which may be political in nature.

Academic and Published Articles

Research publications come in various forms, but most commonly as peer reviewed journal articles, books, policy papers and reviews. Peer review or refereed journal is an academic term for quality control. The peer review process is the evaluation of an article or book chapter by academic peers, to ensure that the submission is academically robust and therefore can be considered credible and reliable if published. Peer review in journal articles is normally blinded, which means that the reviewer does not know the identity of the author and helps to ensure an independent review.

Academic research is now measured using 'impact'. There are various measures of impact, including the 'quality' of the journal (is it internationally recognised?) and the citation rate (how many times the paper is cited in other published research). Journals vary enormously in their impact value based on numerous criteria, such as their national or international reach, the nature of the research, and the size of the dataset. The subject matter in which an article is published will also affect the impact rating significantly, as surgical and medical journals will have a higher impact rating than, say, a sociology journal. Aside from robust, academic impact, there are other tracking tools such as 'Altmetrics', which monitor how work is being discussed using online fora.

Writing for an Academic Journal

In order to have an academic career, it is essential to publish in academic journals. Funders will normally expect a paper to be published in a peer reviewed journal as part of their funding criteria, outlined in the Invitation to Tender. Papers in academic journals could range from a student's PhD research to longitudinal (long-term) studies by an established academic. There are numerous journals in most disciplines and some will have a specific type of focus (e.g. qualitative, quantitative, technical or methodological. See Section Two for definitions). For quantitative research, there is a need to avoid 'publication bias', whereby trials having a 'positive' outcome may be subject to a higher rate of publication and is a wider concern for meta-analysis of a particular topic.

Avoiding bias is also important in qualitative research and researchers take steps to minimize bias, which can occur in different ways. Research bias can occur when the researcher influences the results in order to portray a certain outcome. Bias can emerge from experimental error and failure to take into account all of the possible variables. Bias can occur when researchers select subjects that are more likely to generate the

desired results. The design of the research itself can lead to bias; for example, the research instruments used (survey documents, questionnaires etc) can lead to inadvertent bias if inappropriate response frames are used. The selection of research participants can also lead to bias, but this is generally unavoidable, which makes qualitative research much more dependent upon experience and judgment than quantitative research.

Getting a paper accepted into an academic journal is a long process, often taking months for a response due to the shortage of expert reviewers, with no guarantee of success. Editors will firstly review the paper and hopefully send the paper off for (blind) peer review. Once a paper is submitted for consideration to the journal, there can be a considerable wait (e.g. months) for a response, which will either be to accept the paper with minor revisions, accept the paper with major revisions, or reject the paper for publication. Most journals have an online submission system and authors can track the paper's progress. Even if the paper is eventually accepted for publication, the feedback can be harsh. The feedback will inform the author of how to improve the quality of the submission. The paper will then be revised based on the reviewers' comments and re-submitted for approval. If a paper is rejected, it may be because the content is not considered a good fit for that particular journal, the argument is not robust enough, it is considered to be poorly written, or too many papers with the same topic have been submitted. Once approved for publication, the paper is edited until final draft stage, at which point it will be sent for type setting and copy editing in preparation for publication. Academic papers are now released online prior to hard copy distribution, which can often be more than a year until publication.

Non-Academic Sources of Literature

As well as academic journal articles and books, there are a number of different sources of literature that inform research studies that are not distributed by commercial publishers. These types of publications are known as 'grey literature' and include examples such as government papers, policy proceedings, dissertations and theses, working or conference papers, business reports and online sources or websites with discipline-specific outputs (e.g. Policing Insights, a website specifically for the policing community and those with an interest in criminal justice). These types of publications serve to provide knowledge in smaller or specific research populations and the information is generally more up-to-date, as it can be published much quicker than a commercial publisher.

SECTION TWO

An overview of designing research and definitions

Designing Research

When beginning the process of undertaking research, the understanding of the purpose and outcome of the study is the key starting point. For instance, does the research have a descriptive or analytical purpose, such as to understand behaviours, events, beliefs, attitudes, structures or processes that occur in a given situation? Or does the research have a predictive purpose, to predict an outcome or to forecast events or behaviours resulting from a particular situation? The answer to this question will determine the research approach that will be taken.

The following section will explore what research approaches are appropriate for a particular research design. Research is undertaken using a qualitative, quantitative or mixed methods approach. A qualitative approach would be used if the research has a descriptive or analytical purpose. Alternatively, if the research has a predictive element which suggests there will be an outcome that produces numerical data, a quantitative

approach will be used. Should the research require both an interpretation of discussion and statistical measurement, a mixed methods approach is used.

Research is underpinned by paradigms, or a basic set of ideas and practices about how research operates. The research approach to be taken will depend on the outcome to be achieved: what is the population from which I wish to sample and what is the nature of my interest in this population? Research can be new or empirical data and also be updating or re-visiting previous research findings.

Qualitative Research

A qualitative study is an approach where we understand the meaning of peoples' individual situations, often through their lived experience, which is the importance of this type of study. Conclusions are based on an interpretation of findings and related issues. The number of participants is not a critical factor to the research, as the response of every individual participant is seen as important. A qualitative approach can be used when detailed insight is needed to analyse and understand an issue, and can also be used when dealing with emotive or emotional subjects, as the researcher can ask for details that cannot be answered through means such as surveys with closed (yes/no) questions.

Qualitative approaches deal with the 'grey' issues in research, where there is no single, correct response. It allows people to express nuanced opinions and to reflect on personal, meaningful experiences. Depending on the way that the research is executed, qualitative findings can generate new theories and inform how particular practices or cultures exist or influence policy. Examples of qualitative research approaches are interviews, focus groups, case studies, and narrative data such as diaries or field notes.

It is a common misconception that qualitative research is not generalisable (e.g. applicable beyond the study being conducted). Qualitative research is not generalizable only in the statistical sense that it can refer to entire populations. It is, however, generalizable in the *analytical* sense, in that the findings can easily be compared and contrasted with ideas, concepts and theories that have been previously established, and which good qualitative research rigorously and robustly examines.

Interviewing

Interviews are one of the most common ways of collecting in-depth data and finding out information beyond the research question. It can provide rich, detailed accounts of personal experience. Findings from interviews gather a greater volume of information than can be collected through non-narrative forms of data gathering. The disadvantages, however, are that interviews can be time consuming, particularly listening to stories and the transcription process, and often a large volume of data is collected, which takes time to analyse. Interviews often require the researcher to travel to numerous locations to meet with participants, and therefore interview studies undertaken at distance require the travel costs to be covered appropriately.

Observations

Observations are an important way of examining particular behaviours (e.g. watching participants engaging in a specific activity). Behaviours and body language can also be monitored within a set environment. Observing behaviour is free from cost (other than research travel and researcher time). An 'observation guide' is usually produced, which prompts the observer on what to look for. One particular observation method is a time study, documenting how many people undertake a particular activity in a given time period. Monitoring behaviour can be difficult if there are a lot of participants and findings have to be considered and interpreted by the researcher, especially if observed at a distance. The need for consent is crucial in any research, but will be particularly important if a gatekeeper is required. A gatekeeper is the person who gives consent to undertake the research on behalf of a participant, such as the MOD for Serving personnel.

Case Studies

Case studies are an in-depth study of one perspective and focus on one particular person, group or example. They highlight a specific issue or difficulty and can generate powerful responses. Because case studies generate particularly detailed accounts, they are often time consuming, as repeat interviews with the same person or people are commonplace.

Focus Groups

Focus groups are interviews or meetings with a group of participants. Rich data can be generated, in a structured (using pre-determined questions) or semi-structured (using open questions) way. Although these groups are commonly undertaken face-to-face, meetings can also take place using Skype or by telephone conference. Participants who are comfortable with each other will openly share information, but this can also be a difficulty if a dominant voice overshadows a quiet participant. Equally, participants can replicate answers from others in the group or may be too shy or embarrassed to share their own opinions. These issues can be mitigated to an extent by the researcher managing the focus group (e.g. by directly inviting a quieter individual to voice their opinion or ask for written, anonymous responses).

Questionnaires

The advantage of questionnaires is that it has the potential to yield a lot of responses in a short timescale. Questionnaires can be easy to analyse, quick to populate and given that most questionnaires are now undertaken online, are a cheap way of gathering data. However, response rates are often low, and if written using closed questions (e.g. those which tend to elicit yes or no answers), the responses will not provide in-depth knowledge. If incentives are offered, such as vouchers or cash to take part, people may respond for the reward rather than for their interest in the subject area, which may influence answers.

Other ways of Gathering Narrative Data

Diaries or field notes can act as a prompt for memories of a discussion or observation. Diaries can be a creative way of the researcher engaging with their findings and can be used in more imaginative research outputs. Field notes are comments made by the researcher whilst undertaking the research or immediately following data collection, for his or her own purposes. Field notes are commonly used in qualitative PhD theses, and in specialist, narrative-based academic research journals, to describe the position of the researcher in the research process.

Insider Research

Insider research is a way of expressing that the researcher has personal knowledge of the research subject, (e.g., a veteran undertaking research into day-to-day military life). An insider researcher will bring their unique experience to the research due to their lived experience and will often have heightened interest in their area of research. An insider perspective differs from an ethnographic study. An ethnographic study entails the researcher actually living in the community for which he/she is researching (e.g., a Serving soldier undertaking research into day-to-day military life). An insider who is a veteran will understand the ways of military life, but may have left Service many years ago, when military life may, in some ways, have been different.

Outsider Researcher

Outsider research is a way of expressing that the researcher has no personal knowledge of the research for which they will undertake, for example, a researcher with no connections to the military undertaking interviews with a veteran. The possibility of bias is reduced when the researcher has no *personal* background knowledge of the research area.

Quantitative Research

A quantitative study is the understanding of numerical data, produced from methods such as surveys or large-scale data collection. Quantitative studies test a hypothesis or an expected outcome, based on an experimental situation, which can be replicated and is generalizable in the statistical sense. Quantitative studies focus on measurement, analysis or probability of how likely it is that certain observations will occur. The nature of this enquiry, which is based on numbers and not experience, means that findings are considered free from personal value. A large number of responses are necessary in order for there to be confidence in the results.

Descriptive

Descriptive research aims to describe the behaviours, events, beliefs, attitudes, structures or processes you are interested in. In other words, this approach aims to *quantify,* meaning to express or measure, the variable or phenomena you are interested in. For example, you may want to answer questions such as 'How many?', 'How often?' and 'What proportion?' This information is often collected through surveys or observation, and does not involve manipulating or changing the variable of interest in any way.

Correlation

Correlational research aims to investigate the relationship between two or more variables. This means that changes in one variable are related to changes in the other. The classic causation versus correlation example that is frequently used is that smoking is correlated with alcoholism or excess drinking, but does not cause alcoholism, while smoking causes an increase in the risk of developing lung cancer. This type of research is often carried out to *explain* or *predict* phenomena. Whilst this approach can help to identify relationships between variables, caution should be taken before suggesting that one variable may *cause* another. It is always possible that there are other factors involved that have not be measured.

Causal-Comparative

Causal-comparative research aims to look at the possible reasons behind differences observed between two or more groups. In other words, data is collected to understand *why* one group is different to another on a certain variable (e.g. scores on a test). This often involves looking back in time at the possible factors that may have resulted in group differences. For example, researchers might look back at time spent studying for a test in order to determine differences in grades. However, as with correlational research, it is difficult to determine whether one variable is causing the other, as many additional factors could be involved.

Experimental Research

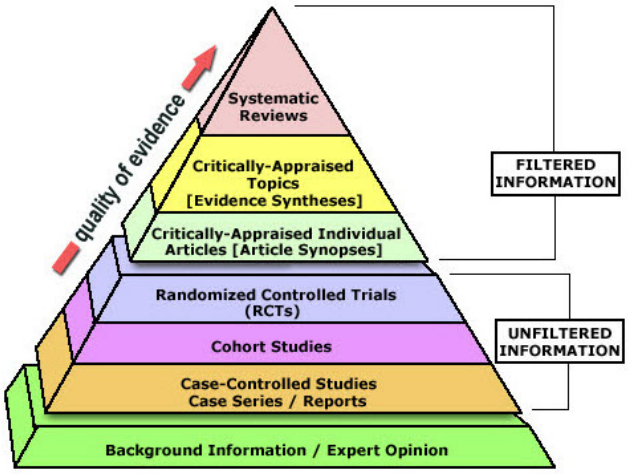
Experimental research aims to examine the effects of different conditions, often different treatments, on participants. In this approach the researcher is in control of the conditions and will often measure a number of variables of interest. This control over the research environment can make it easier to draw conclusions regarding what causes certain effects in participants. Importantly, experimental research involves randomly assigning participants to different treatments to avoid any bias that might distort the results. In experimental research the gold standard for clinical trials is the double blind placebo controlled study, where neither the subjects nor the researchers are aware who is receiving the active treatment, and trials are 'powered', to ensure sufficient numbers are involved to guarantee a statistically meaningful result.

Quasi-Experimental Research

Quasi-experimental research is similar to experimental research, but does not involve randomised assignment of participants. Quasi-experimental research is a form of cluster-randomized trials (CRT). CRTs are needed to compare interventions that are allocated to entire groups of subjects (rather than to

individuals) and are often used where blinding, or anonymising, the researchers and subjects is not possible, and where the trial may involve complex or multiple interventions.

The image below is a 'strength of evidence' pyramid and is a visualisation of the quality and amount of evidence available for quantitative data collection only. This model is not applicable to qualitative data collection.



Research Methods

Research methods are the strategies and processes used as the basis for inference and interpretation or for explanation and prediction.

Common Research Methods

Action research - during a study, the researcher is repeating the process of performing an action, reflecting on what has happened, and using this information in a cyclical fashion to plan their next action. This process of action research has a refining effect when the process is repeated, and with each cycle, the researcher gains a better understanding of the situation. Ultimately the researcher is seeking to make a change in a community through the research being conducted, because the current iteration of research is always informed by feedback from the latter.

Behavioural measures - measuring behaviour and reactions to researcher controlled stimuli (e.g. levels of pain, anger).

Cohort studies – understanding a particular group of people who share the same characteristic through their experiences or behaviours through time on a longitudinal (long term), retrospective (looking back) or prospective (looking ahead) basis.

Experiments – tests under controlled conditions that are made to demonstrate a known truth, examine the validity of a hypothesis, or determine the efficacy of something previously untried.

Grounded theory – grounded theory enables the lived experience to emerge through simultaneous data collection and analysis, which seeks to identify emergent patterns and similarities in and across experiences. The aim of grounded theory is to identify a working theory that explains the lived experiences of its participants, identifying key themes and explaining the relationships between those elements.

Laboratory observations - observations of the reaction and behaviour of individual(s) in a closely controlled environment.

Narrative research examines the stories people tell about their lives and how their stories are informed by broader, cultural narratives about the groups and societies in which they live and work. Narrative inquiry focuses on producing detailed accounts of people's lives and on understanding the nuances and complexities of particular experiences.

Naturalistic observation is a research tool in which a subject is observed in its natural habitat without any manipulation by the observer.

Phenomenology is a type of research which explores people's lived experiences rather than trying to discover facts. Attention is given to individual perceptions, ideas and understanding, because phenomenologists (those who do phenomenology) want to know more about the world, just as it appears to us. In phenomenology, there are no right or wrong answers, but an acceptance that we all experience the world differently. Phenomenologists ask questions about things that happen to us, and they use this information to uncover insights that may get overlooked in every-day life.

Randomised Control Trial (RCT) – using a treatment/experimental group, where one group receive a new treatment or condition, and a control group, who receive no treatment or treatment as normal.

Self-report - collecting data through the participant's report of events through their keeping a diary, through an interview or through completion of a questionnaire.

Advanced glossary of terms

A list of more advanced terms are provided here, used primarily for the purposes of academic study.

Anti-positivist: In modern practice, positivist research is quantitative, typically using research methods such as experiments and statistical surveys, while anti-positivists use research methods such as unstructured interviews or participant observation.

Content Analysis: Analysing text or visual images to identify and count specific content (e.g. the use of certain words, phrases and/or references which can be analysed to describe trends or patterns in communication content).

Case-control study – a type of observational study in which two groups differing in outcome are identified and compared on the basis of some causal attribute (e.g. comparing participants who have a disease with patients who do not have the disease).

Case report form – is the tool used to collect data from each participating patient in a healthcare trial.

Case series – is a type of medical study that tracks patients with a known exposure or who may have received a similar treatment, to examine for exposure and outcome.

Clinical trial – is used to evaluate the effectiveness and safety of medications or medical devices by monitoring their effects on large groups of people.

Ecological study – studies of risk-adapting factors on health or other outcomes, based on populations that are defined either geographically or within a particular time frame.

Empiricism: A scientific approach to research which suggests that all hypotheses and theories must be tested against observations of the natural world, rather than resting solely on known reasoning or intuition.

Ethnography: The study of cultures and customs in defined communities. The emphasis is usually on forms of social interaction and their associated meanings.

Experiment: A study in which all the relevant variables are controlled and manipulated by the experimenter, rather than simply observed. The experimental design is intended to ensure that an experiment affords a valid test of the hypothesis set up and that variables are controlled. The experimental group is a group of

people to whom the experimental treatment is given and who will be compared with a control group who have not received the experimental treatment.

Field experiment**:** Research carried out on location, so outside the laboratory and usually in a natural environment or among the general public, and which follows an experimental design. Best suited to biological, environmental and geological sciences. There may be considerable ethical issues for experiments involving human subjects.

Field study: Research carried out on location, so outside the laboratory or place of learning, usually in a natural environment or among the general public.

Hypothesis: An untested assertion about the relationship between two or more concepts.

Interpretive paradigm: The underpinning philosophical paradigm for most qualitative research. The researcher operates on the assumption that the experiences communicated to them are not simply 'given', rather they must be actively interpreted by the researcher. The researcher therefore plays a more active role in the knowledge production process.

Kinesics: The study of the role of body movements such as winking, shrugging etc, in communication.

Methodology: The principles by which the tools of investigation (methods) should be deployed and interpreted, to understand the research process itself.

Methods: The tools of investigation to gather data which are to be used as a basis for inference and interpretation, for explanation and prediction.

Objective: Having actual existence or reality, uninfluenced by emotions or personal prejudices; based on observable phenomena; presented factually.

Paradigm (research): a philosophical and theoretical framework of a scientific school or discipline within which theories, laws, and generalizations of the experiments performed in support of them are formulated.

Participant Observation: The observer engages in the activities s/he seeks to observe, often under cover.

Passive/non-participant observation: The observer is not engaged in the activities under observation.

Positivist paradigm: An approach to research which is underpinned by the belief in natural laws which may be discovered. Research within the positivist paradigm has three goals - description, control, and prediction. Positivists typically use research methods such as experiments and statistical surveys, while interpretivists use research methods which rely more on unstructured interviews or participant observation.

Post-positivism: Sometimes equated with anti-positivism, but sometimes defined as a paradigm in which absolute truths are accepted, along with the belief that knowledge is constructed in an individual's own reality and that it is up to scientists to prove their objectivity and to reduce their own biases. Post-positivist theories may exist alongside each other.

Subjective: Proceeding from or taking place in a person's mind rather than the external world. Particular to a given person; personal, existing only within the experiencer's mind.

Survey: A detailed study or inspection, as by gathering information through observations, questionnaires, etc. and analysing it.

References

The citations that have been used for this Snapshot have been taken predominantly from reference books that are unavailable online and from teaching materials used at Anglia Ruskin University. The literature used for the purposes of this Snapshot are listed below, but do include some online references.

Although it is not recognised for use in academic institutions, Wikipedia could also be a good starting point for accessing basic information in lay terms.

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