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Question

1. Explain the various research methods and they can be applied.

Answer

There are four research methods and how they can be applied. They are as follows;

1. Quantitave research
2. Qualitative research
3. Pragmatic approach to research
4. Advocacy/participatory approach to research

Quantitative Research

Quantitative research is generally associated with the positivist/postpositive paradigm. It usually involves collecting and converting data into numerical form so that statistical calculations can be made and conclusions drawn.

### The Application

Researchers will have one or more **hypotheses.** These are the questions that they want to address which include predictions about possible relationships between the things they want to investigate **(variables)**. In order to find answers to these questions, the researchers will also have various instruments and materials (e.g. paper or computer tests, observation check lists etc.) and a clearly defined plan of action.

Data is collected by various means following a strict procedure and prepared for **statistical analysis**. Nowadays, this is carried out with the aid of sophisticated statistical computer packages. The analysis enables the researchers to determine to what extent there is a relationship between two or more variables. This could be a simple association (e.g. people who exercise on a daily basis have lower blood pressure) or a causal relationship (e.g. daily exercise actually leads to lower blood pressure). Statistical analysis permits researchers to discover complex causal relationships and to determine to what extent one variable influences another.

The results of statistical analyses are presented in journals in a standard way, the end result being a **P value**. For people who are not familiar with scientific research jargon, the discussion sections at the end of articles in peer reviewed journals usually describe the results of the study and explain the implications of the findings in straightforward terms.

Qualitative Research

Qualitative research is the approach usually associated with the social constructivist paradigm which emphasises the socially constructed nature of reality. It is about recording, analysing and attempting to uncover the deeper meaning and significance of human behaviour and experience, including contradictory beliefs, behaviours and emotions. Researchers are interested in gaining a rich and complex understanding of people’s experience and not in obtaining information which can be generalized to other larger groups.

### The Application

The approach adopted by qualitative researchers tends to be inductive which means that they develop a theory or look for a pattern of meaning on the basis of the data that they have collected. This involves a move from the specific to the general and is sometimes called a bottom-up approach. However, most research projects also involve a certain degree of deductive reasoning (see section on quantitative research for more details).

Qualitative researchers do not base their research on pre-determined hypotheses. Nevertheless, they clearly identify a problem or topic that they want to explore and may be guided by a theoretical lens - a kind of overarching theory which provides a framework for their investigation.

The approach to data collection and analysis is methodical but allows for greater flexibility than in quantitative research. Data is collected in textual form on the basis of observation and interaction with the participants e.g. through participant observation, in-depth interviews and focus groups. It is not converted into numerical form and is not statistically analysed.

Data collection may be carried out in several stages rather than once and for all. The researchers may even adapt the process mid-way, deciding to address additional issues or dropping questions which are not appropriate on the basis of what they learn during the process. In some cases, the researchers will interview or observe a set number of people. In other cases, the process of data collection and analysis may continue until the researchers find that no new issues are emerging.

Pragmatic Approach to Research

The pragmatic approach to science involves using the method which appears best suited to the research problem and not getting caught up in philosophical debates about which is the best approach. Pragmatic researchers therefore grant themselves the freedom to use any of the methods, techniques and procedures typically associated with quantitative or qualitative research. They recognise that every method has its limitations and that the different approaches can be complementary.

They may also use different techniques at the same time or one after the other. For example, they might start with face-to-face interviews with several people or have a focus group and then use the findings to construct a questionnaire to measure attitudes in a large scale sample with the aim of carrying out statistical analysis.

Depending on which measures have been used, the data collected is analysed in the appropriate manner. However, it is sometimes possible to transform qualitative data into quantitative data and vice versa although transforming quantitative data into qualitative data is not very common.

Being able to mix different approaches has the advantages of enabling triangulation. Triangulation is a common feature of mixed methods studies. It involves, for example:

* the use of a variety of data sources (data triangulation)
* the use of several different researchers (investigator triangulation)
* the use of multiple perspectives to interpret the results (theory triangulation)
* the use of multiple methods to study a research problem (methodological triangulation)

In some studies, qualitative and quantitative methods are used simultaneously. In others, first one approach is used and then the next, with the second part of the study perhaps expanding on the results of the first. For example, a qualitative study involving in-depth interviews or focus group discussions might serve to obtain information which will then be used to contribute towards the development of an experimental measure or attitude scale, the results of which will be analysed statistically.

Advocacy/Participatory Approach to Research

To some degree, researchers adopting an advocacy/participatory approach feel that the approaches to research described so far do not respond to the needs or situation of people from marginalised or vulnerable groups. As they aim to bring about positive change in the lives of the research subjects, their approach is sometimes described as emancipatory. It is not a neutral stance. The researchers are likely to have a political agenda and to try to give the groups they are studying a voice. As they want their research to directly or indirectly result in some kind of reform, it is important that they involve the group being studied in the research, preferably at all stages, so as to avoid further marginalising them.

The researchers may adopt a less neutral position than that which is usually required in scientific research. This might involve interacting informally or even living amongst the research participants (who are sometimes referred to as co-researchers in recognition that the study is not simply about them but also by them). The findings of the research might be reported in more personal terms, often using the precise words of the research participants. Whilst this type of research could by criticised for not being objective, it should be noted that for some groups of people or for certain situations, it is necessary as otherwise the thoughts, feelings or behaviour of the various members of the group could not be accessed or fully understood.

Vulnerable groups are rarely in a position of power within society. For this reason, researchers are sometimes members of the group they are studying or have something in common with the members of the group.