

Describing Methods

In the Methods section of a dissertation or research article, writers give an account of how they carried out their research. The Methods section should be clear and detailed enough for another experienced person to repeat the research and reproduce the results. Where the methods chosen are new, unfamiliar or perhaps even controversial, or where the intended audience is from many disciplines, the Methods section will tend to be much more extensive. Typical stretches of text found in this section of a research article or dissertation along with examples of the kind of language used for these are listed below. Note that for many of the functional categories listed later in this section, the verbs are written in the simple past tense and are in the passive voice.

Describing previously used methods

Many researchers have utilised X to measure ...
 One of the most well-known tools for assessing ...
 Traditionally, X has been assessed by measuring ...
 A number of techniques have been developed to ...
 Different methods have been proposed to classify ...
 X is the main non-invasive method used to determine ...
 Different authors have measured X in a variety of ways.
 Several methods currently exist for the measurement of X.
 Previous studies have based their criteria for selection on ...
 X is one of the most common procedures for determining ...
 There are three main types of study design used to identify ...
 The use of life story data has a relatively long tradition within X.
 Recent advances in X methods have facilitated investigation of ...
 There are a number of instruments available for measuring the ...
 Recently, simpler and more rapid tests of X have been developed.
 X and Y are currently the most popular methods for investigating ...
 In most recent studies, X has been measured in four different ways.
 The use of qualitative case studies is a well-established approach in ...
 Xs have been used in the past to investigate the mechanical properties of ...
 Case studies have been long established in X to present detailed analysis of ...
 To date, various methods have been developed and introduced to measure X.
 Since the 1950s, researchers have used a multitude of scientific methods to ...
 This test is widely available and has been used in many investigational studies.
 The methods for measuring X have varied somewhat across this research area.
 In recent years, two different approaches have attempted to account for the ...
 In recent years, molecular methods have been utilised for the quantification of ...
 A variety of methods are used to assess X. Each has its advantages and drawbacks.
 More recent examples of narrative studies within X can be found in the work of Smith (2010).
 Two of the most common methods for estimating X are the use of Y and the measurement of Z.

<p>X studies Studies of X</p>	<p>have traditionally</p>	<p>employed ... based their approaches on ... used model systems to predict ... adopted functionalist perspectives utilised a population-based approach. relied upon participant observation as ...</p>
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Various Different	methods have been	utilised to proposed to employed to	assess ... test for... identify ... capture ... quantify ... measure ... determine ... investigate ...
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Giving reasons why a particular method was adopted

- A major advantage of X is that ...
- The benefit of this approach is that ...
- The decision to use X was based on ...
- X based methods provide a means of ...
- X was selected for its reliability and validity.
- A case study approach was used to allow a ...
- This method is particularly useful in studying ...
- A quantitative approach was employed since ...
- Qualitative methods offer an effective way of ...
- The design of the questionnaires was based on ...
- The X method is one of the more practical ways of ...
- The semi-structured approach was chosen because ...
- The X approach has a number of attractive features: ...
- The second advantage of using the multivariate method is ...
- The study uses qualitative analysis in order to gain insights into ...
- One advantage of the X analysis is that it avoids the problem of ...
- Another advantage of using computer simulations is that it allows ...
- Continuous sampling methods have a number of advantages over ...
- The collaborative nature of the focus group offers another advantage ...
- It was decided that the best method to adopt for this investigation was to ...
- Qualitative methods can be more useful for identifying and characterising ...
- The advantage of this particular method is that it allows us to make predictions about ...
- Many of the distributions were not normal so non-parametric signed rank tests were run.
- It was considered that quantitative measures would usefully supplement and extend the ...

A case-study approach was	used chosen adopted	to ensure that ... to help understand how ... to allow a deeper insight into ... to conduct this exploratory study. to evaluate the effectiveness of ... to gain a detailed understanding of ... to determine the factors that affect ... to assess the management practices of ... to obtain further in-depth information on the ... to capture the complexities of the phenomenon. to provide rounded, detailed illustrations of the ...
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A(n) The One	key major distinct obvious practical potential additional important significant	advantage	of using	Z-scores focus groups a rating scale secondary data self-report data longitudinal data retrospective data regression analysis natural speech data semi-structured interviews a convenience sample a case study approach a comparative approach a mixed method approach a multidimensional approach	is that ...
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X is one of the most	successful widely-used commonly-used	methods techniques	for (used for)	dating ... gathering ... collecting ... evaluating ... estimating ... measuring ... identifying ... determining ...
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Referring to the literature to justify a method or approach

In a recent article, Smith (2009) argues that case studies offer ...
 Smith *et al.* (1994) identify several advantages of the case study ...
 Jones (2012) argues that case studies are useful when the conditions of the research ...
 According to Smith (2011), semi-structured interviews have a wide-spread popularity in ...
 The sensitivity of the X technique has been demonstrated in a report by Smith *et al.* (2011).
 Jones (2006) points out that there is a role for both qualitative and quantitative approaches in ...

Indicating the use of an established method

The solution was then assayed for X using the Y method.
 X was prepared according to the procedure used by Jones *et al.* (1957).
 The synthesis of X was done according to the procedure of Smith (1973).
 X was synthesised using the same method that was detailed for Y, using ...
 Samples were analysed for X as previously reported by Smith *et al.* (2012).
 Analysis was based on the conceptual framework proposed by Smith *et al.* (2002).
 This compound was prepared by adapting the procedure used by Jones *et al.* (1990).

Giving reasons why a particular method was rejected

The limitation of this approach is that ...

A disadvantage of many cohort studies is that ...

A major problem with the experimental method is that ...

The main disadvantage of the experimental method is that ...

The principal limitation of the experimental approach is that ...

However, there are certain drawbacks associated with the use of ...

The disadvantage of this method is its reliance on the availability of ...

However, this method clearly is not valid for analysing long-term trends in ...

There are obvious difficulties in accepting the reliability of self-report information.

There are certain problems with the use of focus groups. One of these is that there is less ...

Describing the characteristics of the sample

The cohort was divided into two groups according to ...

Articles were searched from January 1965 to April 2014.

A random sample of patients with ... was recruited from ...

The sample was representative with respect to gender and ...

Forty-seven students studying X were recruited for this study.

A systematic literature review was conducted of studies that ...

Just over half the sample (53%) was female, of whom 69% were ...

Of the initial cohort of 123 students, 66 were female and 57 male.

Eligible women who matched the selection criteria were identified by ...

Only children aged between 10 and 15 years were included in the study.

The participants were divided into two groups based on their performance on ...

Two groups of subjects were interviewed, namely X and Y. The first group were ...

The project used a convenience sample of 32 first year modern languages students.

All of the participants were aged between 18 and 19 at the beginning of the study...

All studies described as using some sort of X procedure were included in the analysis.

Participants were recruited from 15 clinics across ..., covering urban and rural areas ...

The initial sample consisted of 200 students, 75 of whom belonged to minority groups.

All were between 18 and 30 years old (mean age = 24.27 years, s. d. = 2.05), and comprised ...

Semi-structured interviews were conducted with 17 male offenders with a mean age of 38 years.

Indicating criteria for selection or inclusion

Criteria for selecting the subjects were as follows:

Publications were only included in the analysis if...

The participants in this study were recruited from ...

To identify X, the following parameters were used: ...

The area of study was chosen for its relatively small ...

Primary inclusion criteria for the X participants were ...

A number of criteria were considered when selecting ...

Eligibility criteria required individuals to have received ...

Five individuals were excluded from the study on the basis of ...

A small sample was chosen because of the expected difficulty in obtaining ...

The subjects were selected on the basis of the degree of homogeneity of their ...

A comparison group of 12 male subjects without any history of X was drawn from a pool of ...

Describing the process: typical verbs in the passive form

All participants *were sent* ...
 The data *were normalised* using ...
 Ethical approval *was obtained from* ...
 Drugs *were administered by* ICV injection ...
 Descriptive data *were generated for* all variables.
 The procedures of this study *were approved by* ...
 Prompts *were used as* an aid to question two so that ...
 Data *were collected* using semi-structured interviews in ...
 Participants *were thanked* for their time and effort and for ...
 The experiments *were run* using custom software written in...
 Two sets of anonymised questionnaires *were completed by* ...
 A total of 256 samples *were taken from* 52 boreholes (Figure 11).
 The solution *was washed* three times *with* deionized water and ...
 Significance levels *were set at* the 1% level using the student t-test.
 Data management and analysis *were performed* using SPSS 16.0 (2010).
 Published studies *were identified* using a search strategy developed in ...
 Data *were gathered* from multiple sources at various time points during ...
 Injection solutions *were coded by* a colleague to reduce experimenter bias.
 The pilot interviews *were conducted informally by* the trained interviewer ...
 Article references *were searched* further for additional relevant publications.
 The experiments *were conducted over* the course of the growing period from ...
 Blood samples *were obtained with* consent, from 256 Caucasian male patients ...
 The participants *were asked to* pay close attention to the characters whenever ...
 Independent tests *were carried out on* the X and Y scores for the four years from ...
 This experiment *was repeated under* conditions in which the poor signal/noise ratio was improved.
 The mean score for the two trials *was subjected to* multivariate analysis of variance to determine ...

<p>The participants were asked</p>	<p>to rate ... to recall ... to attend ... to indicate ... to say whether ... to comment on ... to complete two tasks. whether they believed ... to provide feedback on ... a variety of questions about ... to describe an instance when ... to explain what happened during ... a series of open-ended questions that ... to describe what had happened when ... to complete a 20 question survey about ...</p>
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Describing the process: sequence words

<p>To begin this process, ... The first step in this process was to ... The second method used to identify X involved ...</p>	
Prior to	<p>commencing the study, ethical clearance was sought from ... analysing the interview data, the transcripts were checked for ... undertaking the investigation, ethical clearance was obtained from ... data collection, the participants received an explanation of the project.</p>
After	<p>'training', the participants were told that ... collection, the samples were shipped back to X in ... testing for the presence of antibodies, the blood was ... the appliance was fitted, the patients attended X every four weeks.</p>
On	<p>arrival at the clinic, patients were asked to ... completion of X, the process of parameter estimation was carried out. obtaining written informed consent from the patients, a questionnaire was ...</p>
Once	<p>the samples were extracted, it was first necessary to ... the Xs were located and marked, a thin clear plastic ruler ... the positions had been decided upon, the Xs were removed from each Y and ... the exposures were completed, the X was removed from the Y and placed in ...</p>
Following	<p>correction for ..., X was reduced to ... conformational analysis of X, it was necessary to ... administration of X to patients, we assessed the effects on ... this treatment, the samples were recovered and stored overnight at ...</p>
<p>The participants were <i>then</i> shown a film individually and were asked to ... The soil was <i>then</i> weighed again, and this weight was recorded as ... These ratings were <i>then</i> made for the ten stimuli to which the subject had been exposed ... The preparation was <i>then</i> placed in a custom-built microfluidics chamber, covered with ...</p>	
When	<p>dividing X, care was taken to ... removing X, it was important to ... inviting the participants, the purpose of the research was clearly explained.</p>
<p>Finally, questions were asked as to the role of ... In the follow-up phase of the study, participants were asked ... The final stage of the study comprised a semi-structured interview with participants who ...</p>	

Describing the process: *using* + instrument

All the work on the computer was carried out *using* ...
Data were collected *using* two high spectral resolution Xs.
Semi-automated genotyping was carried out *using* X software and ...
Qualitative data were collected *using* a semi-structured questionnaire.
Using the X-ray and looking at the actual X, it was possible to identify ...
Comparisons between the two groups were made *using* unrelated t-tests
The data were recorded on a digital audio recorder and transcribed *using* a ...
Statistical significance was analysed *using* analysis of variance and t-tests as appropriate..
15 subjects were recruited *using* email advertisements requesting healthy students from ...
The relationship between X and Y was examined *using* the Pearson correlation coefficient and ...

Describing the process: adverbs of manner

The resulting solution was *gently* mixed at room temperature for ...
A sample of the concentrate was then *carefully* injected into ...
The soil was then placed in a furnace and *gradually* heated up to ...
The vials were shaken *manually* to allow the soil to mix well with the water.
The medium was then *aseptically* transferred to a conical flask.
The tubes were *accurately* reweighed to six decimal places using ...

Describing the process: infinitive of purpose

In order to investigate the effects of ...
In order to identify ..., the participants were asked to ...
In order to help familiarise participants with ..., they were asked to ...
In order to address these ethical concerns, the following steps were taken: ...
In order to understand how X regulates Y, a series of transfections was performed.

To avoid ...
To test whether ...
To establish whether ...,
To better understand how ...
To address the possibility of ...
To measure X, a question asking ... was used.
To determine whether ..., the cells were incubated for ...
To rule out the possibility that ... , the participants were ...
To control for bias, measurements were carried out by another person.
To assess whether and how Xs are produced and received, we measured ...
To see if the two methods gave the same measurement, the data were plotted and ...
To compare the scores three weeks after initial screening, a global ANOVA F-test was used.
To enable the subjects to see the computer screen clearly, the laptop was configured with ...
To increase the reliability of measures, each X was tested twice with a 4-minute break between ...

The vials were capped with X *to prevent* ...
The process was repeated several times *in order to remove* ...
In an attempt *to make each interviewee feel* as comfortable as possible, the interviewer ...
The interview schedule comprised structured and open questions *to identify and explore* ...

Describing the process: expressing purpose with *for*

For the next two questions, a Likert scale was used.

For the purpose of analysis, two segments were extracted from each ...

For the purpose of height measurement, participants were asked to stand ...

For the estimation of protein concentration, 100 µL of protein sample was mixed with ...

Describing questionnaire design

The first question elicited information on ...

Seven questions, adapted from X, assessed ...

All survey questions utilised a 5-point Likert scale.

Using a 5-point Likert scale, participants were asked ...

A short questionnaire was designed to ascertain the participants' ...

The questionnaire was designed to measure the following constructs:

Participants were asked to respond using a 5-point Likert scale ranging from ...

The questions asked participants to rate how strongly they agreed with each statement.

The study began with two open-ended survey questions that asked participants to indicate ...

The questionnaire asked participants to complete three open-ended questions that asked about ...

The first question	was designed to	find out ... gauge how much... ascertain whether ... identify the types of ... test participants' knowledge of ... measure the students' ability to explain ... elicit a simple answer to a complex question about ...
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Question 2 The third question The final question	asked participants	to list ... to rank ... to provide ... to describe ... to reflect on ... to choose between ... to indicate whether ... to rate how much they liked ...
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Question 2 asked participants to indicate	whether ... which of three ... where and when ... the extent to which they ... what they liked best about ... how often they think about ... what their preferred X is for ... what percentage of the time ...
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Q2 asked participants to rate	themselves as ... the intensity of ... their interest in ... the importance of ... their perception of ... the extent to which ... how frequently they ... their level of agreement with ... how strongly they agreed with the statement ...	on a 5-point Likert scale.
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Describing the process: statistical procedures

The data *were normalised* using ...
 A *p* value <0.05 *was considered* significant.
 Descriptive data *were generated* for all variables.
 Reliability *was calculated* using Cronbach’s alpha.
 All analyses *were carried out* using SPSS, version 20.
 Non-parametric tests *were used* to compare the number of ...
 Independent sample t-tests *were carried out* to assess whether ...
 Statistical analysis *was performed* using SPSS software (version 20).
 Significance levels *were set* at the 1% level using the student t-test.
 Data management and analysis *were performed* using SPSS 16.0 (2010).
 A Pearson correlation analysis *was conducted* in order to assess the strength of ...
 An independent t-test *was carried out* on each of the variables to determine whether ...
 The mean score for the two trials *was subjected* to multivariate analysis of variance to determine ...

An independent t-test was	run used conducted performed carried out	to	assess whether ... test the hypothesis that ... compare the mean scores of... determine whether there was a difference ... test for differences between the two groups. test whether any differences existed between ...
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Indicating methodological problems or limitations

In particular, the analysis of X was problematic.
 In observational studies, there is a potential for bias from ...
 The small size of the dataset meant that it was not possible to ...
 Further data collection is required to determine exactly how X affects Y.
 Another major source of uncertainty is in the method used to calculate X.
 In this investigation there are several sources for error. The main error is ...
 It was not possible to investigate the significant relationships of X and Y further because...
 The responses relating to X were subjective and were therefore susceptible to recall bias.