

Describing research methods

A Useful word combinations

We may carry out a procedure or an experiment or a pilot study. [preliminary study]
 We use or, more formally, employ a method or a technique or an approach or an instrument or a device. [an object or method used for a special purpose] You can also use or employ any particular type of research methodology.
 Apparatus [equipment for a lab experiment] is assembled and checked. *Apparatus* is an uncountable noun but you can talk about a piece of apparatus.

B Types of research method

research method	what the researcher does	limitation of method
experimental study	manipulates ¹ a variable [anything that can vary] under highly controlled conditions to see if this produces [causes] any changes in a second [dependent] variable	done in the highly controlled setting of the laboratory – these conditions are artificial ² and may not reflect what happens in the infinitely more complex real world; other researchers often try to replicate ³ successful experiments
correlational study	attempts to determine the relationship between two or more variables, using mathematical techniques for summarising data	only shows that two variables are related in a systematic way, but does not prove or disprove ⁴ that the relationship is a cause-and-effect relationship
naturalistic (empirical) observation (also known as field study)	observes and records some behaviour or phenomenon ⁵ , often over a prolonged period, in its natural setting without interfering with ⁶ the subjects or phenomena in any way	can be very time-consuming as researcher may have to wait for some time to observe the behaviour or phenomenon of interest; difficult to observe behaviour without disrupting ⁷ it
survey	makes inferences from ⁸ data collected via interviews or questionnaires	intentional deception, poor memory, or misunderstanding of the question can all contribute to inaccuracies in the data
case study	keeps in-depth ⁹ descriptive records, as an outside observer, of an individual or group	often involves only a single individual as the subject of the study and this person may not be representative ¹⁰ of the general group or population

¹ makes changes to ² not natural ³ do in exactly the same way ⁴ show something is not true ⁵ something that exists and can be

seen, felt, tasted, etc. ⁶ altering ⁷ making it change ⁸ comes to conclusions on the basis of ⁹ detailed ¹⁰ typical



Remember that **phenomenon** is the singular and **phenomena** is the plural. The same applies to **criterion/criteria**. [a standard by which you judge, decide about or deal with something] See also Unit 31.

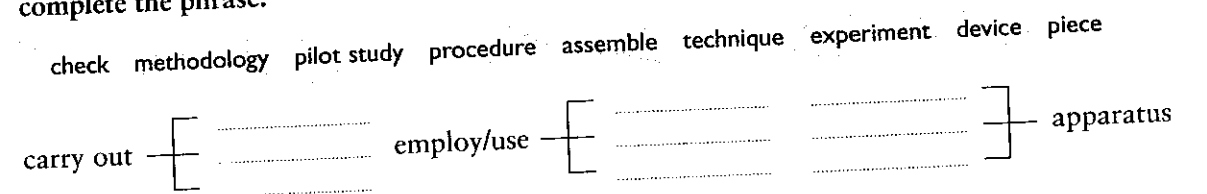
Exercises

41.1 Complete the sentences in these two texts with words from the opposite page.

Scientists disagree as to whether cold fusion, the controlled power of the hydrogen bomb in the laboratory, is possible. In the past, some believed that e.....s..... under la.....c..... using palladium and platinum electrodes could in fact cause heavy hydrogen atoms to fuse into helium and release energy, as the sun does. In carefully controlled experiments, researchers believed they could ma..... the v..... arising from the complexity of the electrodes and other equipment used. In such co....., they argued, cold fusion was possible. However, attempts to r..... some of the experiments which claimed to be successful failed, and many now believe that cold fusion is in fact theoretically impossible.

Some linguists believe that we can best d..... how language is processed by laboratory experiments. However, laboratory experiments are by definition ar..... and may not r..... what happens in the real world. Other linguists believe, therefore, that em..... o..... is better, and prefer to carry out f..... studies and c..... studies of individuals in na..... se..... In this way, i.....-d..... data can be c..... by observers without i..... with the process in any way, even though this may be a more t.....-c..... method. However, individual studies in real situations may not be r..... of the general p..... of second language learners. In short, both approaches have their advantages and disadvantages.

41.2 Use the words in the box to complete the diagrams. Add *alan* and anything else needed to complete the phrase.



41.3 Now complete the sentences using phrases from 41.2.

- 1 It was a new of apparatus so we it first and then it before using it.
- 2 The team carried out a before conducting the main to see if the they were using was reliable.
- 3 The team needed to employ a different for measuring the pressure, so they used a new which they manufactured in their own laboratory.