

Report Writing: Tenses in Science

Scientific reports, research papers, and lab reports follow a clearly defined and predictable structure. They are also known as 'empirical' reports, or **AIMRaD** reports: **A**bstract, **I**ntroduction, **M**ethod, **R**esults and **D**iscussion. It is important to use tenses that are appropriate to each section.

Abstract

The Abstract is usually written last after a report is completed. It has the job of summarising each section of the report so that a busy person only needs to read the Abstract to get an idea of the report in its entirety. As the experiment or study conducted is complete when the Abstract is written, use **simple past tense**.

- *In this report a survey **was conducted** ...*
- *Samples **were taken** from ...*
- *Results **indicated** that ...*
- *The evidence **showed that** ...*

Introduction

The Introduction of a report is critical. Its main job is to include background information to contextualise the aim of the study. This leads to a short review of previous literature (a more detailed literature review can follow the Introduction). After this, a statement outlines what the writer intends to do to advance knowledge in the area. The purpose or aim of the study follows, which may be in the form of a hypothesis or research question. A statement about the value of the study may conclude the Introduction (optional). Thus, there are five distinct stages in a well-crafted introduction. We use a different tense for each, as follows.

1. Establishing a context - **simple present tense**
 - *Nutrient reabsorption **is** a common phenomenon in forest trees.*
 - *The factors **that control** the concentration of aluminium in seawater are poorly known.*
2. Reviewing previous research - **simple past tense**, or **present perfect tense** for multiple authors
 - *Allen (1994) **found that** there was a rise in the ... Jones (2010) reported that ...*
 - *Several researchers, notably Jones (2000) and Healy (2001) **have found that** ...*
3. Advancing present research - **present perfect tense**, i.e., outlining the need for more research owing to a gap in our knowledge in the area
 - *Little research **has been done** on topic development in ESL students' composition.*
 - *Few studies **have reported on** the effects of computer-assisted instruction.*
 - *There **has been** a paucity of data looking at how autonomous vehicles are calibrated.*
4. The purpose or objective of the current study - **simple present tense**
 - *This paper **aims** to determine ...*
 - *The objective of this report **is** to*
5. The value or justification of the present study (optional) - **simple present, simple future** or **present perfect tense**
 - *This topic **has been identified** as being crucial to teachers in providing them with ...*
 - *This **will be** of benefit for researchers in terms of ...*

Methodology/Methods

This section outlines what was done in the study. As this is now over, it is written in the **past tense**. Use the passive voice. Write in a structured way, covering some of the following sections.

Overview

- *A bilingual and monolingual group **were compared** ...*
- *Total phosphorus and total nitrogen **were measured** ...*

Sample

- The participants **were selected** from a pool of ...
- A standard protocol **was followed** in selecting....

Restrictions

- Only bilingual students **were** of interest for the purposes of this study ...

Sampling technique

- The bilingual subjects **were selected** from the cohort of Mexican participants.
- An inter-rater reliability coefficient **was used** to ...

Materials

- The test instrument employed for this study **was** a ...
- The model used consisted of a series of glass plates which were **used** to ...

Procedure

NB: In some reports, this comprises a separate section to Methods

- The participants **were** first given a glass of water to drink ... They were then asked to ...
- The experimental group **was instructed** that the auditory test would be five-minutes in duration.

Another common Methods structure

- Locate the findings
- Identify the most important data
- Comment briefly on the data (detailed comment is given in the Results section)

Results

Like the Methods section, the Results uses the past tense as the experiment or study is over.

- Overall, 70% of insects collected **were** non-phytophagous.
- Results **indicated** that there was a rise in the ... and a fall in the ...

An exception to this is when you describe diagrams and tables. Use **present tense** for this.

- Figure 1 above **shows** that there is a ...
- Histogram 3.2 below **indicates** that ...

Discussion

The largest section of a scientific report is written using both the **simple past tense** to summarise findings, and the **simple present tense** to interpret the results and make them relevant or significant to readers. Modal verbs to express tentativeness are used ('appears that ...', 'suggests that...', 'seems that'...).

- Leaf carbon and phenolic content **did not appear** to differ across sites indicating that the response of secondary plant chemicals **is** complex.
- It **seems that** microbial activity **caused** immobilisation of labial soil phosphorous, however it **is** unlikely that...

Sources:

Academic Skills Unit. (2018). Using Tenses in Scientific Writing. Retrieved from http://services.unimelb.edu.au/__data/assets/pdf_file/0009/471294/Using_tenses_in_scientific_writing_Update_051112.pdf

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