2nd year Licence, Ecology/Biological sciences Scientific English

University of Relizane 2021/2022

Scientific English: introduction

People often talk about English as a global language. With more than 350 million people around the world speaking English as a first language and more than 430 million speaking it as a second language, there are English speakers in most countries around the world.

People often call English the language of sciences, so if your ambitions lie in science (including natural sciences), you can't neglect English either. Much of the technical terminology is based on English words, and if you want to learn about the latest developments and discoveries from around the world, you'll read about them in journals and research reports published in English, no matter whether the scientists who wrote them are from China or Algeria. And, of course, with good conversational English, you'll be able to network and make important contacts at conferences and seminars.

English also opens doors in the academic world. Of course, if the best program in your field is in an English-speaking country, English will give you the opportunity to study with the top scholars. Western universities are attracting more and more visiting scholars, students from all around the world, and their common working language is English. As well as studying and teaching, attending international conferences and publishing in foreign journals are some of the key steps to success in academia. In order to speak at these conferences or publish in these journals, excellent English is essential.

Writing A Research Report

1. Structure

When presenting a research report, it is conventional to present the piece using a certain style and structure.

The writing should be **formal**. In other words, it should use precise vocabulary and avoid slang or colloquial phrases. The meaning should be as clear as possible, using short sentences.

The report should begin with the *title*, which should be clearly written to describe the work. For example: 'A Study to test the effectiveness of Massage in alleviating the pain of a Migraine.'

Next should be the *aim* of the piece, which should relate to the title. 'Aim – To identify which forms of massage help migraine sufferers.'

The third element will be the *hypothesis*, or the idea which is being considered in the report. 'Hypothesis - All Forms of Massage Provide Some Relief to Migraine Sufferers.'

Next comes the *materials or resources* used in the experiment on which the report is based. These should be presented in a simple list. If a risk assessment was used, that should be included next.

The report is now ready to get to the main parts. Firstly, using the *past tense*, the method of any research is reported. Next, a table, diagram or graph will show the *results*. Finally, the *conclusion* will be written, which will include a statement regarding the extent of the accuracy of the hypothesis.

2. IMRaD

"IMRaD" format refers to a paper that is structured by four main sections: Introduction, Methods, Results, and Discussion. This format is often used for scientific reports as well as for reporting any research in natural sciences.

2.1. Introduction - Make a case for your research

The introduction explains why this research is important or necessary or important. Begin by describing the problem or situation that motivates the research. Move to discussing the current state of research in the field; then reveal a "gap" or problem in the field. Finally, explain how the present research is a solution to that problem or gap. If the study has hypotheses, they are presented at the end of the introduction.

2.2. Methods - What did you do?

The methods section tells readers how you conducted the study. It includes information about your population, sample, methods, and equipment. The "gold standard" of the methods section is that it should enable readers to duplicate your study. Methods sections typically use subheadings; they are written in *past tense*, and they use a lot of passive voice.

2.3. Results - What did you find?

In this section, you present your findings. Typically, the Results section contains only the findings, not any explanation of or commentary on the findings. Results sections are usually written in the *past tense*.

2.4. Discussion - What does it mean?

In this section, you summarize your main findings, comment on those findings, and connect them to another research. You also discuss limitations of your study, and use these limitations as reasons to suggest additional, future research.

3. Language

For English scientific writing, there are many phrases which can be used to connect various sections of the piece. These will help the flow of the writing, and also ensure that it remains formal in style. Such phrases can include:

On the other hand - means in contrast. For example: 'Our results largely indicated that massage gave temporary relief. On the other hand, these results were not found in 20% of cases.

In conclusion - this phrase is used at the end of a section. 'In conclusion, our results demonstrate that massage should be considered as a means of treatment by specialists.'

However - this can be used in the same way as 'on the other hand.' 'The massage was successful initially, however, we discovered that the benefits lessened in time.

It should be noted that... - A formal way of stressing a point. 'While our hypothesis was largely proved to be correct, it should be noted that our sample included very few 18-30-year olds, who could react differently.'

4. Grammar

There are two tenses in English - past and present.

The past tense in English is used:

- to talk about the past
- to talk about hypotheses
- for politeness.

There are four past tense forms in English:

Past simple	I worked		
Past continuous	I was working		
Past perfect	I had worked		
Past perfect continuous	I had been working		

Example of Past tenses conjugation of the verb to study.

Simple past		Past continuous	
I	studied	1	was studying
you	studied	you	were studying
he/she/it	studied	he/she/it	was studying
we	studied	we	were studying
you	studied	you	were studying
they	studied	they	were studying
Past perfect		Past perfect continuous	
I	had studied	1	had been studying
you	had studied	you	had been studying
he/she/it	had studied	he/she/it	had been studying
we	had studied	we	had been studying
you	had studied	you	had been studying
they	had studied	they	had been studying
		-	

Language functions in scientific English

1. Agreeing and Disagreeing

Agreeing and disagreeing are typical elements of spoken English but may also appear in scientific writing. When writers want to compare their findings with those of other scientists, they may have to express their agreement or disagreement. For **example**: *These results* agree with the findings of X's research ...

1.1. expressing agreement

- We entirely agree with his views on ...
- We are in complete agreement with ...
- We would (strongly) endorse X's opinion on ...
- Our findings support those of ...
- We would agree with X in principle, but ...
- By and large, we accept what X says, but ...

1.2. expressing disagreement

- We completely disagree with X on this point.
- We are in total disagreement with ...
- We are not at all convinced by X's argument that ...
- We have to say that X's argument is somewhat unconvincing.

2. Classifying

Classifying means allocating an object or term to a class of objects or terms which has already been established.

3. Comparing

Comparing means putting two or more objects, facts or ideas together and stating in what ways they are similar or dissimilar. The two phenomena must be comparable, that is, they must have some characteristics in common.

Comparing two things is a fairly simple logical operation. Nevertheless, there is a wide variety of phrases and sentence structures that can be used to express different kinds of comparison.

3.1. Similarity

When you want to emphasise the similarity between two things, you can use the following sentence patterns:

Α	is	about / almost / roughly / essentially the same	В
	are	as	
	should be	similar to	
		like	
		equal to	
		no different from	
	can be	compared directly to	
A and B	are	identical	in every respect
		the same	in most respects
		alike	in that
		similar	

3.2. Dissimilarity

Dissimilarity basically means that one phenomenon is either more or less than another in one or several respects. The following structures can be used:

A	is	(much) (far) (substantially) (somewhat) (rather) (slightly)	far) more + adjective less + adjective somewhat) rather)	than	В
		(almost)	as + adjective	as	
	Is not	(quite)	so + adjective		

3.3. Superiority and inferiority

This means saying how something is better or worse than something else, with regard to particular features. Phrases you can use include:

Α	Is	superior to	В	in a certain	way	
		inferior to		from a certa	iin point of vie	2W
				with regard to		
				as regards		
				in being		more + adjective
				in that it is		less + adjective
				inasmuch as it is		
				In	giving	more + noun
					showing	greater + noun
					exhibiting	less + noun

Some useful phrases for English scientific writing

Introduction

Recent researches have revealed that	
A common strategy used to study is to	
In the past several decades, have played an important ro	ole in
The main problem is that	
This problem has attracted more attention in the field of	_
Only a few studies have shown	
However, has rarely been studied directly.	
Moreover, few studies have focussed on	
Recently, a more general solution has been proposed for th	nis problem.
For this study, it was of interest to investigate	
The aim of this work is to	
The ultimate goal is to produce a	
This research has made a number of significant contribution	ns to the field of
Literature review	
The literature review shows that	
Several studies suggest that	
A number of questions regarding remain to be addressed	ed.
Historically, there has been a great deal of confusion in the	literature regarding
More specific research questions will be introduced and inv	vestigated in
A critical open question is whether	
Materials and methods	
A test was used to determine the significance of data	
However, according to our data	

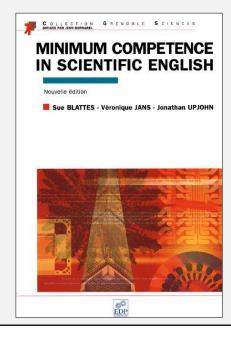
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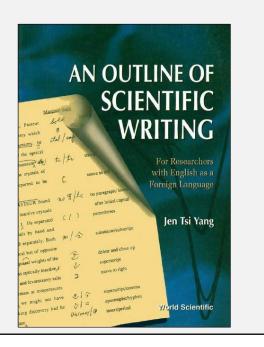
The evaluation of the data presented in this work leads to ___ Statistical analyses were performed by using the ____ For the current work, it is sufficient to point out that Results might be sufficient, especially in ___ **Results and discussion** Our results demonstrated that ___ We showed that ___ This analysis found evidence for ___ When comparing our results to those of older studies, it pointed out that A popular explanation is that This is particularly important when investigating ___ Alternatively, it could simply mean that ___ As discussed, this is due to the fact that ___ **Conclusion** The findings of this study can be understood as ____ On this basis, we conclude that ___ This is an important finding in the understanding of the

Future research should further develop and confirm these initial findings by ___

Find more about **Scientific English**

Regardless, future research could continue to explore ___





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