

# AE Academic English UK



## Research Report Writing

### STEM

EXAMPLE

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## Teacher's Notes

### EXAMPLE

**Aim:** To help students understand the key components of a research report. This lesson focuses on the six main components: abstract, introduction, methods, results, discussion and conclusion, and the focus is on secondary data.

**Time:** 90 -120 minutes.

**Delivery:** This lesson can be delivered face-to-face or online. For online delivery, each worksheet could be placed in a class document on OneDrive.

### Lead in

- Students discuss the five questions with their partner(s).
- Whole class feedback: Take students ideas but do not give away too much at this stage.

### Task 1

- Students match the components of a research report with the corresponding definitions.
- Feedback: Students compare with a partner or a small group before being nominated to give answers to the whole class.
- Display **ANSWERS**.

### Tasks 2-14

- There are a good variety of tasks to keep the students engaged and the exercises are organised in the following way:
  1. Students consider what they already know through completing a task.
  2. Students read a section of a research report and complete a task.
  3. Students summarise what they have learned.
- After each task, students should be given time to compare with a partner or a small group before being nominated to give answers to the whole class.
- **ANSWERS** can be displayed after each task.

### Tasks 15-18

- These last tasks are related to the language of research reports. Students read through the complete research report and firstly, identify the tenses and modals used; secondly, identify the relative clauses; thirdly, identify the integral and non-integral in-text citations; and fourthly, select useful fixed phrases.
- After each task, students should be given time to compare with a partner or a small group before being asked to give their answers for the whole class.
- **ANSWERS** can be displayed after each task.

\* **ANSWERS** are at the end of the worksheets.

### Task 19: Extension (not included in timing)

- Students research and write a mini research report using secondary data. The instructions included on the student's worksheet are: Write a 1500-word research report on the following: '**Assessing the** [redacted] **and Economic Impacts**'.

### Differentiation Options

- Students work in pairs to complete the report.
- Change the focus to research only the environmental impacts or the economic impacts.
- Students write one section only and receive feedback before writing the next section.
- Provide students with one key text as a starting point.
- Decrease the word limit to 1000 words.

## Research Report Writing EXAMPLE

### Lead in

Discuss these questions with your partner(s).

1. Have you ever written a research report before?
2. What is the purpose [redacted]?
3. What makes a good research report?
4. What [redacted]?
5. What would be a good topic to research on your current course?

### Task 1

Although there are many different types of research report, many include similar components and follow a similar format. Match the following components with the corresponding definitions and then compare with your partner(s).

	Feature		Definition							
1.	Title Page	a.	This section displays all the sources you have used in your work [redacted] school.							
2.	Abstract	b.	This tells your readers exactly where they can locate specific sections.							
3.	[redacted]	c.	This [redacted] and visuals.							
4.	Introduction	d.	This is a critical evaluation of your findings.							
5.	Literature Review ( [redacted] and theses)	e.	This provides [redacted], the aims and objectives, and what is already known about the topic.							
6.	Methods	f.	This [redacted] suggestions or recommendations based on your findings.							
7.	Results	g.	This is a short summary of the context, methods, findings [redacted] report.							
8.	[redacted]	h.	This discusses how you collected your data.							
9.	Conclusion	i.	This in [redacted] have not included in the main report.							
10.	Reference List	j.	This [redacted] thinking about your subject area.							
11.	[redacted]	k.	This should state the topic of the report concisely.							
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.

**Tip:** Always check with your teachers which features you need to include before you start research and writing.

### Important Information

The following tasks will [redacted] of a research report by thinking about [redacted] knowledge and analysing a student's [redacted] the tasks, look at the following [redacted] task brief:

**Student's Task Brief**

- Write a 1500-word research report on the following: *'Understanding [redacted] energy'*.
- Include the following components: abstract, [redacted] discussion and conclusion.
- You are NOT [redacted] data.
- You are expected to use secondary data.
- You need [redacted] the Harvard Referencing System.
- You do NOT need to include a separate literature review.
- You do NOT [redacted] or any appendices.

**Abstract**

**Task 2**

What do you think are the key features of an abstract of a research report? Complete the gaps in the following sentences with words from the box below.

	audience	concisely	[redacted]	research	[redacted]
1.	This introduces the importance of the _____ from your viewpoint.				
2.	It _____ the _____ paragraph.				
3.	It needs to be written clearly and _____.				
4.	The _____ should _____ the whole _____.				
5.	_____ main _____ of the report.				

**Task 3**

Read and analyse the abstract of a student's research report and complete the following exercises.

<b>Understanding the environmental footprint of wind energy</b>	
The [redacted] the extent to which wind [redacted] and wildlife and provide solutions. <sup>1</sup> Secondary data comes from research into migratory birds, as well as interviews [redacted] to outline [redacted] the reasons behind them. <sup>2</sup> The findings from this report suggest that although wind power infrastructure [redacted] significant [redacted] rates, there [redacted] which can combat [redacted] challenges. <sup>3</sup>	

Identify the function of each sentence by selecting the appropriate option from the box. Compare with a partner(s) when you have finished.

	To [redacted]	To explain the purpose	To summarise the results
1.			
2.			
3.			

Now answer these questions.

		Yes	No
1.	Is the [redacted] and concisely?		
2.	Can you understand the whole report from the abstract?		

**Summary**

What have you learned about the abstract of a research report?

**Introduction**

**Task 4**

What do you think are some of the key features of an introduction of a research report? Decide from the following options. Compare with your partner(s) when you have finished.

	Feature	Yes	No
1.	Background information.		
2.	_____.		
3.	Literature on the topic.		
4.	Research _____ the gap.		
5.	Definitions of key terms.		
6.	Research _____ hypothesis		

**Task 5**

Read the introduction of the student’s research report and reorder the sentences so that they are logical. Add your answers to the table below and then compare with your partner(s) when you have finished.

It accounted for almost 10% of electricity generation in the US \_\_\_\_\_ some \_\_\_\_\_ responsible \_\_\_\_\_ half, producing a total of 2,330 TWh worldwide in 2024 (McKenna et al., 2024).<sup>1</sup> Consequently, \_\_\_\_\_ policymakers \_\_\_\_\_ balance between mitigating climate change and not \_\_\_\_\_ wildlife.<sup>2</sup> Wind energy has become one of the \_\_\_\_\_ deployed renewable \_\_\_\_\_ (Roddis, 2018).<sup>3</sup> Not only must the placement of wind turbines be carefully considered, but also its design and \_\_\_\_\_ are to avoid injuring, or \_\_\_\_\_ of bats or birds.<sup>4</sup> However, collision is not the only detrimental impact at play, species’ habitats can be forcibly \_\_\_\_\_ urn, \_\_\_\_\_ affects \_\_\_\_\_ (Roddis, 2018).<sup>5</sup> Although the benefits of wind power in helping to reduce our reliance on fossil fuels, and therefore, \_\_\_\_\_ emissions \_\_\_\_\_ concerns regarding the impacts of wind energy infrastructure on wildlife, particularly as the growth of wind \_\_\_\_\_ to rise (\_\_\_\_\_).<sup>6</sup>

	Reordered Sentences
1.	
2.	
3.	
4.	
5.	
6.	

**Summary**

What have you learned about the introduction of a research report?

**Methods**

**Task 6**

What are some of the key features of the methods section of a research report? Match column A and column B to make full sentences. Compare with your partner(s) when you have finished.

Column A			Column B		
1.	It [redacted] approach		A.	is appropriate for addressing the research questions/hypothesis.	
2.	It explains why the chosen design		B.	[redacted] used.	
3.	It details [redacted]		C.	conducted including the data collection method and duration of the study.	
4.	It lists tools, equipment or		D.	data [redacted].	
5.	It [redacted] was		E.	and structure of the research.	
6.	It explains how the collected		F.	were [redacted] size.	
1.		2.		3.	
			4.		5.
					6.

**Task 7**

Read and analyse the methods section of a student’s research report and complete the following exercises.

With regard to the research carried out on migratory birds, Marques et al. (2019) used a variety of methods.<sup>1</sup> [redacted] System, movements [redacted] bird were logged to estimate the displacement of birds [redacted] loss of soaring areas.<sup>2</sup> Moreover, uplift estimates [redacted] distinct uplift models [redacted] where soaring birds’ routes are often employed.<sup>3</sup> Finally, bird movements in areas of rising warm air were [redacted] Brownian bridge [redacted] generalised additive mixed modelling” (p. 93) to assess the impacts of wind turbines that are positioned [redacted] concerning [redacted] interviews were conducted with 12 participants from a range of UK enterprises.<sup>5</sup> These included [redacted] companies, UK [redacted] for wind energy, and the UK commercial wind energy sector.<sup>6</sup> Interviewees were questioned on topics such [redacted] whose goals are to reduce the [redacted] by wind energy, the drivers behind these innovations and whether lessening the ecological impacts is [redacted], and if [redacted] companies who find ecologically low-impact solutions.<sup>7</sup> Finally, the data was then coded in order to closely determine the [redacted] examples of [redacted] them in [redacted] regulation, collaboration, competitiveness and cost (Roddis, 2018).<sup>8</sup>

Can you identify any of the key features from task 6 in the student’s report? Compare with your partner when you have finished.

	Key Features	Yes	No	Sentence number(s)
1.	The overall approach.			
2.	[redacted]			
3.	Participants and/or subjects.			
4.	[redacted] software.			
5.	Data collection.			
6.	[redacted]			

**Task 8**

Another student has written their methods section in a different way. Read and analyse how it differs.

To investigate the impact of wind energy on migratory birds and [redacted], a systematic [redacted] using academic databases.<sup>1</sup> Key sources were identified through searches in databases such as [redacted] Library.<sup>2</sup> The [redacted] “migratory birds and wind turbines,” “GPS tracking in avian research,” “uplift models in bird flight,” and “[redacted].”<sup>3</sup> Boolean [redacted] used to refine searches and retrieve relevant peer-reviewed journal articles.<sup>4</sup>

To explore [redacted] perspectives, additional searches were conducted using terms such as “wind energy innovation,” “[redacted] energy,” [redacted] wind farms.”<sup>5</sup> Sources were selected based on their relevance to conservation efforts and technological [redacted].<sup>6</sup> Studies [redacted], such as Marques et al. (2019), which used GPS tracking and uplift models to analyse bird movement, [redacted] that [redacted] (2018), was included to understand industry-driven innovations.<sup>8</sup> Once the relevant literature was gathered, the [redacted], such as displacement [redacted] techniques, and industry responses to ecological concerns.<sup>9</sup> This categorisation helped establish connections [redacted] bird [redacted] to mitigating environmental impact.<sup>10</sup> By structuring the literature review in this way, the study ensured [redacted] of both [redacted] solutions.<sup>11</sup>

What do you notice? Make some notes here to share with the class.

Can you identify any of the key features from this student’s report?

	Key Features	Yes	No	Sentence number(s)
1.	The overall approach.			
2.	[redacted]			
3.	Participants and/or subjects.			
4.	Tools, [redacted]			
5.	Data collection.			
6.	[redacted]			

**Summary**

What have you learned about the methods section of a research report?

*Tip: Always check with your teachers to determine which type of method you need to include in your research report.*

**Results**

**Task 9**

What are the key features of the results section? Rejumble the following sentences with your partner(s) to find out.

1.	bias or [redacted] any/ as they are.
2.	research questions or objectives/ structure [redacted] order.
3.	research [redacted] highlight the key results/ to the/ succinctly.
4.	ensure they are labelled/ if using tables or [redacted] / to illustrate your data.
5.	relevant [redacted] redundant descriptions/ only focus on.
6.	in this section/ do not explain why/ only [redacted] it means.

**Task 10**

Read and find the eight errors the student has made with verb forms in their results section. Complete the table below and then compare with a partner.

The research undertaken by Marques et al. (2019) will discover [redacted], that is to say, [redacted] the birds in a certain place, has shown an uneven spread, with some areas experiencing higher [redacted]. This was most likely due to the [redacted] as despite the potential for the birds [redacted] within 674m of a wind turbine is used less than anticipated. To be more precise, up to 14% of the areas [redacted] affected by [redacted]. In terms of velocity, orographic uplift, i.e. what birds use to soar along a flight route, is showing to be more clustered [redacted] speeds than [redacted] birds use [redacted]. Roddis (2018), however, has been able to identify 15 examples of innovation and seven drivers that address [redacted] energy in [redacted], innovations such as fitting a protective mesh over micro-turbines, using offshore kite-powered or vertical axis wind turbines [redacted] the speeds [redacted] will begin to rotate could curtail fatalities. Furthermore, the Royal Society for the Protection of Birds has three ongoing projects [redacted] to help inform where wind [redacted], therefore, disturbing or displacing wildlife. [redacted] vibration assisted installation and [redacted] can be reduced noise pollution when [redacted] turbines, as less noise will emit [redacted], and acoustic deterrents can warn [redacted] place when a turbine is being installed. [redacted] that the majority drivers behind these [redacted] regulation and competitiveness.

	Language Errors	Correction
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		



**Summary**

What have you learned about the results section of a research report?

**Discussion**

**Task 11**

What are some of the key features of the discussion section of a research report? Read the following paragraph and complete the gaps with words from the box below.

outcomes   
     
 longest   
     
 findings   
 limitations

As the \_\_\_\_\_ part of the \_\_\_\_\_ section interprets the study's results \_\_\_\_\_ questions and existing \_\_\_\_\_. It \_\_\_\_\_, highlights implications and acknowledges \_\_\_\_\_. It compares the \_\_\_\_\_ highlights how \_\_\_\_\_ as addressing any unexpected \_\_\_\_\_.

Read and analyse the discussion section of the student's research report and complete the following exercise.

The results from Marques et al.'s (2019) study would indicate \_\_\_\_\_ has a profound \_\_\_\_\_ species of birds migrate.<sup>1</sup> Since migratory birds need access to both orographic and thermal uplift due to the fact \_\_\_\_\_, there is likely to be \_\_\_\_\_ or an avoidance of the area surrounding it, as the majority of turbines are placed in mountainous ranges to \_\_\_\_\_ wind speeds.<sup>2</sup> Although McKenna et al. (2024) claim that collisions with wind rotor blades are lower \_\_\_\_\_ other \_\_\_\_\_ regarding \_\_\_\_\_ the areas where they need to be, be it for food, shelter or navigation, because of the presence of a turbine.<sup>3</sup> Thus, it \_\_\_\_\_ to raise \_\_\_\_\_ help \_\_\_\_\_ in particular, as these species "have the highest flight activities at low wind speeds" (McKenna et al., 2024, p.3) \_\_\_\_\_ an increased \_\_\_\_\_ birds, which would also keep production of wind energy at an adequate level.<sup>4</sup> Regarding noise pollution, it would \_\_\_\_\_ could \_\_\_\_\_ that affects animals' breeding, feeding and nesting patterns, which could then lead to long-lasting \_\_\_\_\_ may be \_\_\_\_\_ monopiles which cause the noise are driven into the seabed.<sup>6</sup> Thus, one could infer that the success of \_\_\_\_\_ species and the \_\_\_\_\_ are placed in, meaning that more data is required in this field.<sup>7</sup> Another issue is that some species \_\_\_\_\_ become \_\_\_\_\_ noise, which in turn, impacts on how they hunt for food (McKenna et al., 2024), which would indicate that more \_\_\_\_\_ how much quieter the noise \_\_\_\_\_ be.<sup>8</sup>

Match each sentence with its corresponding function and then compare with your partner(s) when you have finished.

Sentence Number	Sentence Function	
1	a	To explain a cause-and-effect _____
2	b	To suggest a potential solution to a problem while qualifying its effectiveness.

3	c	To [redacted] findings.
4	d	To draw a conclusion and highlight the need for further research.
5	e	To [redacted] evidence.
6	f	To present a specific problem and suggest a need for further research.
7	g	To contrast two [redacted] concern.
8	h	To provide a limitation to the previous suggestion, offering a more specific context [redacted].

1.		2.		3.		4.		5.		6.		7.		8.	
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**Summary**

What have you learned about the discussion section of a research report? Put your ideas in the box and be prepared to share with the class.

**Conclusion**

**Task 13**

What are the key features of the conclusion of a research report? Decide if the following sentences are true or false and then compare with your partner(s) when you have finished.

	Key Features	True	False
1.	This should be a short section with no new information.		
2.	[redacted].		
3.	It analyses the limitations in the methods used.		
4.	[redacted]		
5.	It explains why the findings matter.		
6.	It [redacted]		

**Task 14**

Use the key information provided to write the conclusion to the same student's research report with your partner.

1.	McKenna et al.'s claim that wind power impacts are smaller [redacted] disputed.
2.	Wind power negatively [redacted] various species.
3.	Wind energy development is driven by enforcement, cost, and competition.
4.	The wind [redacted] wildlife, with science-based, funded solutions.
5.	Solutions should address wildlife impacts at [redacted] harmony.
6.	Further [redacted] species affected by wind infrastructure.

Write approx. 150 words in the box below and then compare with the student's conclusion.

What are the similarities and differences between your conclusion and the student's conclusion?

Similarities	Differences

**Summary**

What have you learned about the conclusion of a research report?

**Task 15**

Read through the student’s complete research report (excluding the abstract). Highlight examples of the tenses and modals that the student used in the colours suggested below and analyse the reason the student used this language. Compare with your partner(s) when you have finished.

**1. Introduction**

Wind energy has become one of the most affordable, and thus, most deployed renewable energy options around the world (Roddis, 2018). It accounted for almost 10% of electricity generation in the US and almost 15% in the EU, and in some countries such as Demark, it was responsible for more than half, producing a total of 2,330 TWh worldwide in 2024 (McKenna et al., 2024). Although

WHOLE TEXT INCLUDED IN PAID VERSION....

Tenses and Modals	Example	Reason for Use
Present simple active		
Present simple passive		
Present continuous active		
Present continuous passive		
Past simple active		
Past simple passive		
Present perfect simple		
Present perfect passive		
Future simple passive		
Modal verbs active		
Modal verbs passive		

### Task 16

Read through the student's complete research report again. Highlight examples of the relative clauses that the student used in the colours suggested and analyse the reason the student used this language. Compare with your partner(s) when you have finished.

#### 1. Introduction

Wind energy has become one of the most affordable, and thus, most deployed renewable energy options around the world (Roddis, 2018). It accounted for almost 10% of electricity generation in the US and almost 15% in the EU, and in some countries such as Demark, it was responsible for more than half, producing a total of 2,330 TWh worldwide in 2024 (McKenna et al., 2024). Although

WHOLE TEXT INCLUDED IN PAID VERSION....

Relative Clause	Example	Reason for use
Defining relative clauses		
Non-defining relative clauses		

**Task 17**

Read through the student’s complete research report again and identify the following in-text citations. Complete the table with the reason this language was selected with your partner(s).

In-text Citations		
Reporting verbs (Integral citations)		Reason for use
1.	Marques et al. (2019) <b>used</b> a variety of methods.	
2.	Marques et al. (2019) <b>discovered</b> that the [redacted] ...	
3.	Roddis (2018), however, <b>was able</b> to identify 15 examples of...	
4.	The results from Marques et al.’s (2019) [redacted]	
5.	Although McKenna et al. (2024) <b>claim</b> that...	
Examples of non-integral citations		Reason for use
1.	(Roddis, 2018).	
2.	(McKenna et al., 2024).	
3.	[redacted]	

**Task 18**

Read through the student’s complete research report again. What fixed phrases could you use in your research report? Complete the table with the following information.

	Fixed Phrase	Section
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

**Extension**

**Task 19**

You are now ready to write your own research report using secondary data. Read through the following information carefully and ask your teacher when your deadline is and where you should submit your report.

**Student's Task Brief**

- Write a 1500-word research report on the following: *'Assessing [redacted] Energy: [redacted] Impacts'*.
- Include the following features: abstract, introduction, methods, results, discussion and conclusion.
- You are NOT expected to collect your own data.
- You are [redacted].
- You need to include a reference list using Harvard Referencing System.
- You do NOT need to [redacted].
- You do NOT need to include a table of contents or any appendices.

## Research Report Writing **ANSWER KEY**

### Task 1

	Feature		Definition
1.	Title Page	a.	This section displays all the sources you have used in your work in a format that has been decided by the school.
2.	Abstract	b.	This tells your readers exactly where they can locate specific sections.

1.	<i>k</i>	2.	<i>g</i>	3.		4.		5.		6.		7.		8.		9.		10.		11.	
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### Abstract

#### Task 2

	past audience concisely summarises research sections
1.	This introduces the importance of the <i>research</i> from your viewpoint.
2.	It <i>summarises</i> the research report in one paragraph.

**ALL ANSWERS INCLUDED IN PAID VERSION...**