

Editage Language Enhancement Guide

Communicate your research in fluent English

Through this report, your Editage English Coach will help you

- ✓ improve your understanding of English language rules and best practices so that you can gradually write like a native English speaker,
- ✓ communicate your research in fluent English to your target readers across the globe,
- ✓ understand academic language style and conventions, and
- ✓ write papers more confidently in English.

The report contains 3 parts:

- Overall comments on your language skills and guidance for improvements,
- Detailed examples of focus areas found in your original text and corresponding suggestions for accurate ways in which to communicate those examples,
- Recommendations for reading to help you improve your language skills.

Note from your English Coach

Dear author,

My name is George, and I am your English Coach for this project. I have 10 years of experience in providing English language guidance. I have reviewed for *Microfluidics and Nanofluidics* (IF: 2.437) and published papers in *Biomicrofluidics* (IF: 2.531) and *Journal of Nanobiotechnology* (IF: 5.345).

Publishing academic work in international English language journals can be challenging for native English authors and ESL (English as a Second Language) authors alike, I assure you! Through this report, my goal is to help you overcome this challenge gradually and with confidence.

Below, I have shared my assessment of your paper from the perspective of academic English accuracy and usage. I have read and understood your paper thoroughly before offering suggestions. Studying my recommendations below and applying them will gradually help you become proficient in English.

All the best! All good research deserves to be shared with the world!

Grammar

Example 1: “Water transportation through one-dimensional (1D) nanospaces were directly observed by the rates of water vapor adsorption in the internal nanospaces of highly pure single and double wall carbon nanotubes that have quasi-1D and 1D nanospaces, respectively.”

- **English Coach’s revised version:** “Water transportation through one-dimensional (1D) and quasi-1D internal nanospaces of highly pure single- and double-walled carbon nanotubes, respectively, *was* directly investigated *from* the experimentally measured rates of water vapor adsorption in these nanospaces...”

- **Explanation for the change:** A singular subject should be accompanied by a singular verb, and plural subject should be accompanied by a plural verb. The subject in both versions is “water transportation,” a singular noun. While the original version uses the plural verb “were,” the revised version uses the singular verb “was.” Always check whether the subject of a sentence is a singular or plural noun and choose the verb accordingly. The revised version also improves other aspects of the original sentence. For instance, the original uses the preposition “by” to explain how the direct observation was performed. “By” is used to indicate an agent of an action or a tool that was used to perform an action. The agent could be a person, a thing, or another action. However, “rates” is neither an agent nor a tool. It is the basis on which the water transportation was directly observed. “From” is the correct preposition here. Alternatively, if you wish to use “by,” the sentence can be revised as “...was directly investigated by experimentally measuring the rate of water vapor adsorption...” (note how the noun “experimentally measured rates” was changed to an action).

Example 2: “As these channels are flexible and complex structures, nanoporous material having model structure...”

- **English Coach’s revised version:** “As these channels are flexible and complex structures, *a* nanoporous material having *a* model structure...”

- **Explanation for the change:** Articles (“a,” “an,” and “the”) are placed before a noun to indicate its specificity/uniqueness. “A” and “an” are called indefinite articles, whereas “the” is called a definite article. The definite article is used to refer to something specific or particular. For example, "I just saw the most popular movie of the year." There are many movies, but only one particular movie is the most popular. Therefore, we use “the.” An indefinite article is used to refer to something non-specific or non-particular. The original sentence is a general statement that refers to any nanoporous material of a group of nanoporous materials; likewise, it refers to any one model structure among a group of model structures. Therefore, these nouns require the indefinite article “a.”

Example 3: “The fractional fillings of water vapor for 1D system were significantly increased from 0.5 to 10 s”

	<ul style="list-style-type: none"> • English Coach’s revised version: “The fractional <i>filling</i> of water vapor for <i>the</i> 1D system <i>increases rapidly</i> from 0.5 to 10 s” • Explanation for the change: Firstly, the word “filling” is an uncountable noun in this sentence. An uncountable noun is one that usually cannot be expressed in a plural form. Other examples include "milk," "water," "air," "money," and "food." Also note that an indefinite article cannot be used with an uncountable noun because it assumes that the noun is singular. Secondly, the definite article is required for “1D system” because it refers to a specific 1D system that was mentioned previously in the text.
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<p style="text-align: center;">Sentence construction/ Phrasing</p>	<p>Example 1: “High-resolution transmission electron microscopy (HRTEM) observations were performed on SWCNT and DWCNT using JEM-2100F (JEOL Co.) at 120 kV.”</p>
	<ul style="list-style-type: none"> • English Coach’s revised version: “<i>The SWCNTs and DWCNTs were observed by</i> high-resolution transmission electron microscopy (HRTEM) using JEM-2100F (JEOL Co.) at 120 kV.”
	<ul style="list-style-type: none"> • Explanation for the change: In this revision, the original sentence was made much more direct by introducing the subjects of the observation first and simplifying the action from “observations were performed” to “observed.” Moreover, in the revised construction, the equipment name appears closer to “high-resolution transmission electron microscopy (HRTEM),” enhancing clarity.
	<p>Example 2: “Figure 1 shows the HRTEM images of DWCNT and SWCNT. The average internal diameters of DWCNT and SWCNT are 1 and 2–3 nm, respectively.”</p>
	<ul style="list-style-type: none"> • English Coach’s revised version: “Figure 1 shows the HRTEM images of the DWCNT and SWCNT, <i>with</i> average internal diameters of 1 and 2–3 nm, respectively...”
	<ul style="list-style-type: none"> • Explanation for the change: In the original passage, “DWCNT” and “SWCNT” are repeated unnecessarily across 2 sentences, and the information in these 2 sentences can easily be accommodated in a single sentence of medium length. Therefore, in the revision, these sentences were combined, making the repetition of “DWCNT” and “SWCNT” unnecessary.
	<p>Example 3: “Hydrogen bonding formation of water molecules is restricted by 1D nanospace. Therefore, as a result of restriction of hydrogen bonding formation water molecules rapidly transport through 1D nanospaces.”</p>
<ul style="list-style-type: none"> • English Coach’s revised version: “<i>The rapid transport of water molecules in 1D nanospaces is attributed to</i> the restricted formation of <i>hydrogen bonds</i> in water molecules in these 1D nanospaces.” 	
<ul style="list-style-type: none"> • Explanation for the change: As in the preceding example, in the original passage, “hydrogen bonding formation” is repeated across two sentences, and accordingly, these two sentences were simplified by combining them. Note that this revision has improved another aspect of this passage. In the study, the rapid transport was directly observed. 	

The restricted formation of hydrogen bonds was inferred through calculations to be the reason for the experimentally observed rapid transport. The revision from “as a result of A, B occurs” to “B is attributed to A” makes the expression consistent with this information.

Word choice	<p>Example 1: “Hence, the anomalous properties of water have been continuously studied.”</p> <ul style="list-style-type: none"> <p>English Coach’s revised version: “Hence, the anomalous properties of water have been studied <i>extensively</i>.”</p> <p>Explanation for the change: The word “continuous” means “occurring over an extended period of time without interruption.” However, the sentence is referring to multiple studies, each of which has a beginning and an end. The correct word here is “extensively” because numerous far-reaching studies have been conducted on the topic.</p>
	<p>Example 2: “Nevertheless, the mechanism of water transportation through the internal nanospaces of carbon nanotubes is still not clear.”</p> <ul style="list-style-type: none"> <p>English Coach’s revised version: <i>However</i>, the mechanism of water transportation through the internal nanospaces of <i>CNTs remains to be elucidated</i>.</p> <p>Explanation for the change: The word “nevertheless” means “in spite of that.” So, when a sentence is introduced with “Nevertheless,” the reader expects to see something positive that occurred or exists in spite of what was stated in the preceding sentence. This sentence, however, presents some negative information. “However” is the correct word for such circumstances. In the latter part of the sentence, “is still not clear” was revised to make the expression more formal.</p>
	<p>Example 3: “MD simulations with the leapfrog time integration scheme were performed for understanding water transportation through carbon nanotubes.”</p> <ul style="list-style-type: none"> <p>English Coach’s revised version: “MD simulations with the leapfrog time integration scheme were performed for understanding <i>the</i> water transportation <i>mechanism</i>.”</p> <p>Explanation for the change: In this study, simulations were performed to understand how water transportation occurs through 1D nanospaces in CNTs. That is, the study aimed to understand the mechanism of the water transportation. The revised version concisely conveys this meaning.</p>

Academic language conventions	<p>Example 1: “Thus, water properties in carbon nanotubes...”</p> <ul style="list-style-type: none"> <p>English Coach’s revised version: Thus, <i>the behavior of</i> water in <i>CNTs</i>...</p> <p>Explanation for the change: Once an abbreviation has been defined, it should be used consistently (without the expanded form) in all subsequent instances. Furthermore, “water properties in” refers to how water behaves in CNT. Hence, “properties” was changed to “behavior.”</p>
	<p>Example 2: “Adsorption rates of water vapor were measured at 303 K every 50 ms using a homemade volumetric apparatus.”</p> <ul style="list-style-type: none"> <p>English Coach’s revised version: “Adsorption rates of water vapor were measured at 303</p>

K every 50 ms using a *custom-designed* volumetric apparatus.”

- **Explanation for the change:** Any apparatus, device, or instrument that was developed specifically for a study is described as “custom-designed” in academic writing. The word “homemade” is considered informal.

Example 3: “A complete MD simulation (100 ps) was conducted close to 303 K.”

- **English Coach’s revised version:** “A complete MD simulation (100 ps) was performed *at ~303 K*”
- **Explanation for the change:** The symbol “~” means “approximately.” The original, “close to 303 K,” is considered imprecise in academic writing. “Approximately” or “~,” which convey the same information as “close to,” are preferred in academic writing. They are more formal and indicate that the exact value was either not recorded or unimportant.

Punctuation

Example 1: “Ideal single and double wall CNTs (SWCNTs and DWCNTs) were synthesized by Hata et al. and Endo et al., respectively; those have extremely low metal catalysts, long aspect ratios, and hydrophobic internal nanospaces.”

- **English Coach’s revised version:** “Model single- and double-walled CNTs (SWCNTs and DWCNTs) synthesized by Hata et al. and Endo et al., respectively, were found to have extremely low metal catalysts, high aspect ratios, and hydrophobic internal nanospaces.”
- **Explanation for the change:** Avoid the use of the semicolon to split a sentence whenever the statements on both sides of the semicolon can be unified as a single statement without loss of clarity. In this case, the statements on both sides have the same subject: “single- and double-walled CNTs.” Therefore, the sentence could be easily recast without any loss of clarity. In fact, the revised sentence, which reads as a single statement, is easier to understand and more concise.

Example 2: “Water transportation through a water channel in biomembrane is another important issue, because a water channel is involved in many physiological processes.”

- **English Coach’s revised version:** “Water transportation through a water channel in a biomembrane is another important research *topic because* a water channel is involved in many physiological processes.”
- **Explanation for the change:** In most cases, you should not use a comma before “because” when it connects two clauses in a sentence. This comma should only be used if the part preceding “because” is a negative statement. Such usage of a comma before “because” aids clarity. For example, consider the sentence “Alex didn’t win the race because of his level of ability.” Without a comma, it has the following meaning: “Alex didn’t win the race because of his level of ability. He won because of other reasons.” (The second statement is implied by the lack of a comma). In contrast, if a comma is inserted before because, the sentence would mean that Alex was not the winner of the race.

Example 3: “On the other hands, the increase of thermal diffusivity for 2 mm diameter is moderate.”

- **English Coach’s revised version:** “In contrast, the thermal diffusivity in the *2-nm-*

diameter SWCNT increases moderately.”

- **Explanation for the change:** The original sentence did not clearly mention the object of “thermal diffusivity.” However, it might not always be feasible to spell out the name of the object, especially when repeating it across consecutive sentences. The repetitiveness can be reduced by turning the three-word descriptor (2 mm diameter) into a compound adjective for the object. A compound adjective is formed by words that jointly describe a noun (e.g., “water” and “soluble” in “water-soluble compound”). Such compound adjectives are usually hyphenated to indicate that they form a single unit. Therefore, the revised sentence reads “2-nm-diameter SWCNT.” The use of the hyphen also aids clarity. For example, in the sentence “I saw a man-eating alligator,” it is clear that the alligator eats humans. Without the hyphen, the sentence will read as “I saw a man eating alligator” (i.e., the man was eating an alligator). Another example in the manuscript is “single- and double-walled CNTs.”

RECOMMENDED READING

As a bonus, I have shared a list of articles divided by areas of improvement. I do hope you find them informative!

Area of improvement	Description
Grammar	https://owl.purdue.edu/owl/general_writing/grammar/index.html
Sentence construction	https://www.editage.com/insights/6-actionable-tips-to-improve-academic-writing https://owl.purdue.edu/owl/general_writing/mechanics/index.html
Word choice	https://www.editage.com/insights/a-vocabulary-lesson-for-clear-writing-commonly-confused-words
Academic language convention	https://www.editage.com/insights/using-past-and-present-tenses-in-research-writing https://www.editage.com/insights/how-to-effectively-use-active-and-passive-voice-in-research-writing
Punctuation	https://www.editage.com/insights/quick-tips-on-using-commas-brackets-and-dashes-in-a-research-paper https://www.editage.com/insights/8-pros-and-cons-of-using-the-oxford-comma https://owl.purdue.edu/owl/general_writing/punctuation/index.html