

# An analysis of English Language errors in Engineering reports

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## Abstract

Researching and presenting research work in a digestible form is a task in itself. This article analyses the errors in the research articles of engineers with the objective of presenting it to the academic community to enable them polish up their writing skills- in short to polish their English language skills. A sample of close to 150 research papers of both novices and expert academicians from different branches of engineering have been analysed ,with a special focus on the words, cohesive and other syntactic elements used ( and misused)by writers to present their reports/papers/theses. The identity of the authors have been withheld due to different reasons. Some of the most common errors identified include *inappropriate use of connectives* , *misuse of prepositions*, and *inadequate hedging expressions*

**Keywords: hedging; cohesive devices, prepositions research articles**

## 1.Inadequate Hedging expressions:

One of the main features of reporting any experimental work or inferences gleaned from literature , which are always prone to claims and counterclaims, is the use of hedging language. Adrain Walwaork defines it as” ..couching possibly grand sounding claim in away that leaves the claim open to interpretation by others...”(91) the purpose of which is to tone down oppositions and dilute arrogance or to defend oneself from any predictions that could turn out to be wrong”. Despite the fact that most engineers produce and report their work in tightly controlled experimental conditions, this aspect of reporting research work cannot be ignored. Most reports seem to be ridden with such strong statements, some examples of which are given below:

### Original Version:

“While purchasing the product or while availing services the customers *generally make* a decision, relying solely on the information available in the review sites.

The author clearly refers to the tendency of customers’ to make decisions based on the literature review. But the phrase “tend to” has not been used. The revised version given below presents the results much more cautiously

### Revised version:

“Although all of them are not required during classification, a substantial number of irrelevant and redundant features (*tend to*) affect the overall performance of the classifier.

Similarly, in the following extract

“....surface roughness increases with the fiber orientation” should be re-drafted as

“surface roughness *tends to* increase with surface orientation”.

Yet another classic case of absence of hedging expressions are in the following examples :

Original :“...cutting force, cutting temperature and surface roughness graphs are having the same trend”

Ideally it is desirable if the sentence reads as follows:

**Revised:** Cutting force, cutting temperature and surface roughness graphs *seem to exhibit the same trend*”

“...*The conclusion has been arrived that trapezoidal tooth router tool performs well ..*”

“...**The results of the study seem to indicate** that the that trapezoidal tooth router appears to perform better in meeting the desired quality of the trimmed edge”.

*It is important to add words such as "seem" "appear" etc to tone down the claims*

## 2.In appropriate wordchoice/connotations:

Word choice and connotations are crucial in research language and it is more so in the case of engineers, whose world is ruled by precision and accuracy .Let us take the case of following examples:

“...Hence, there arises a necessity of finding the **truthfulness** of these reviews”

“This limitation **attracts** people to post spurious reviews in the sites in order to either promote or demote the products”

What the researcher means here is that *the limitation* referred to in his work “ provides a loophole” to post spurious reviews. The phrase” provides a loophole” lends the desired negative connotation and therefore, is a more appropriate choice when compared to “attract”. Similarly, though the terms *truthful* and *authentic* have similar shades of meaning, learned scholars would prefer to use of the word “authenticity”, because the former refers to veracity whereas the latter refers to a value or virtue.

The revised versions of the examples sound more academic both in style and register:

“...Hence, there arises a necessity of finding the authenticity of these reviews”

“This limitation **provides a loophole** for people to post spurious reviews in the sites in order to either promote or demote the products”.

Similarly, the word suffers is used incorrectly in the following example and should be replaced with “prone to”

Original version :

.” However, PSO easily suffers from the partial optimism which provides less speed and direction for the particles”

Revised version :

.” However, PSO **is easily prone to epartial optimism** which provides less speed and direction for the particles”

Yet another, most misused word is “proposed”. It is perfectly fine to use this word when the engineer refers to the “ the proposed algorithm / or system” in the abstract , introductory or review chapters, where he/she makes a case for presenting his proposal or even until the preliminary stages of his work. However, this word can be removed or substituted with the “name of the algorithm/ name of the method” during or after the experiential description .The proposed system or algorithm or method has already graduated to become the “AXX method/algorithm “ because the researcher (and the reader) have moved past the stage of experimentation and reporting are already over and are moving closer towards reporting and interpreting results.

Careful choice of words is this yet another feature of academic writing that has been largely ignored

### 3. Superfluous/inadequate use of connectives:

Connectives hold the ideas and sentences hold ideas together and give a sense of continuity to the passage. Both wrong /and excessive use of connectives can make the road jerky for a reader

#### Original version :

Abrasive water jet machining can be a good solution for trimming the edges of composites and other materials, *but* through holes in stacks typically require hard cutting tools and multistep drilling methods [3]

In the sentence above, the connective *but* is placed inappropriately and the use of *although* brings in the contrast much better, as given in the revised version below

**Revised version :** “**Although** Abrasive water jet machining can be a good solution for trimming the edges of composites and other materials, the holes in stacks typically require hard cutting tools and multistep drilling methods.”

Similarly in the sentence given below, the preposition “at” is wrongly used, while the phrase “in terms of” is a much better substitute.

#### Original version :

...Though the ABC-EELB-PWDG Rout performs EELB-PWDGR, the ABC algorithm performs worst at exploitation and has low search speed, poor population diversity, stagnation within working method, and rapped to local optimal solution

#### Revised version :

...Though the ABC-EELB-PWDG Rout performs EELB-PWDGR, the ABC algorithm performs worst *in terms* of exploitation and has low search speed, poor population diversity, stagnation within working method, and rapped to local optimal solution

### 4. Wrong use of prepositions :

The use of wrong prepositions can sometimes change the meaning of the relationships between propositions. In the example given below, the preposition “to” is wrongly used instead of “in”

**Original version :** “Composite materials are becoming more important *to* aerospace, naval, space, and automotive industries.. Some aircraft structures use stacks of fibre composites and (of)aluminum or titanium, and these present unique machining challenges.

**Revised version :** Composite materials are becoming more important *in* aerospace, naval, aerospace, naval, space, and automotive industries.

In the second example given below, the right preposition should have been “..mostly along the trajectory lines” and not “in trajectory lines”. The preposition “in” has been used inappropriately, while “along the” would sound better and more accurate.

Original version : “the general load balancing approaches cannot improve load balancing in WMSN as the selection of nodes is mostly *in* trajectory lines.

**Revised version :**

“the general load balancing approaches cannot improve load balancing in WMSN as the selection of nodes is mostly *along the trajectory line*”.

**5.Lack of parallelism**

Yet another common mistake noted in most research works is the absence of parallelism in grammatical parts. In the steps describing an algorithm given below, the verbs *change and loop back* are in active imperative voice, while in steps 7 and 8 , the author suddenly switches over the passive “frogs are sorted in ...it is partitioned,/ are stated”, thus disrupting the flow of the steps

**Step 5: Change** the particle’s velocity and position according to equations (13) and (14) respectively.

**Step 6: Loop** back to step 2 until a criterion (convergence rate reaches the maximum number of iterations) is met.

**Step 7: Frogs are sorted in descending order** based on their fitness value and **then it is partitioned** into subsets called as memplexes (m).

It is very important for tenses, prepositions and articles to agree with one another

Effective academic writing depends on many factors other than the points listed in this paper. However, given the scope of the paper, not all points could be covered. . Since most of us are conditioned by the kind of English, we have learnt at school or college, it is also important to think from the point of the reader or the editor for us. This requires observing rules of grammar, vocabulary and the rest. As rightly pointed out by Hyland and Swales it is important for academic writing to “ ...evoke both affinity and engagement “(2000,1990) and this involves observance of the rules of academic writing.

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Academic Writing for Graduate Students, 3rd Edition, Essential Tasks and Skills ,  
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John M. Swales & Christine B. Feak