

4. 论文写作要点

Agenda

- 作文的基本原理 Elementary Principles of Composition
 1. 论文设计 (Design – structure, content)
 2. 段落写作 (Paragraph)
 3. 语言表达 (Presentation)
 4. 修改完善 (Revision)
 5. 谨慎表达 (Express Caution)
- 作文风格 Style

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论文设计

- 题目设计，章节设计，段落设计，实验设计。
- 选择一个合适的设计，在写作过程中保持不变。
 - A basic structural design underlies every kind of writing. Writers will in part follow this design, in part deviate from it, according to their skills, their needs, and the unexpected events that accompany the act of composition.
 - Writing, to be effective, must follow closely the thoughts of the writer, but not necessarily in the order in which those thoughts occur. **This calls for a scheme of procedure.** In some cases, the best design is no design, as with a love letter, which is simply an outpouring, or with a casual essay, which is a ramble. But in most cases, **planning must be a deliberate prelude to writing.**
 - The first principle of composition, therefore, is to foresee or determine the shape of what is to come and pursue that shape.

论文设计

- 科技论文设计先设计论文的结构（outline），包括：
 - 题目
 - 摘要
 - 绪论
 - 节、小节的结构和题目
 - 结论
 - 参考文献
- Most forms of composition are less clearly defined, more flexible, but all have skeletons to which the writer will bring the flesh and the blood. The more clearly the writer perceives the shape, the better are the chances of success.

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段落Paragraph

- Make the paragraph the unit of composition 论文写作的基本单元
 - The paragraph is a convenient unit; it serves all forms of literary work. As long as it holds together, a paragraph may be of any length — a single, short sentence or a passage of great duration.
 - If the **subject** (主题) on which you are writing is of slight extent, or if you intend to treat it briefly, there may be no need to divide it into **topics** (话题、专题). Thus, a brief description, a brief book review, a brief account of a single incident, a narrative merely outlining an action, the setting forth of a single idea — any one of these is best written in a single paragraph.
 - After the paragraph has been written, examine it to see whether division will improve it.

段落设计与写作

- Ordinarily, however, a subject requires division into topics, each of which should be dealt with in a paragraph.
- The object of treating each topic in a paragraph by itself is, of course, to aid the reader.
- The beginning of each paragraph is a signal that a new step in the development of the subject has been reached.
- **As a rule, single sentences should not be written or printed as paragraphs.**
 - An exception may be made of sentences of transition, indicating the relation between the parts of an exposition or argument.

段落设计与写作

- 段落的第一句。
- **As a rule, begin each paragraph either with a sentence that suggests the topic or with a sentence that helps the transition.**
- If a paragraph forms part of a larger composition, its relation to what precedes, or its function as a part of the whole, may need to be expressed. This can sometimes be done by a mere word or phrase (again, therefore, for the same reason) in the first sentence.
- Sometimes, however, it is expedient (可取的) to get into the topic slowly, by way of a sentence or two of introduction or transition.

段落写作例子

The ever-growing volume of big data generated in business processes starts to defeat the power of the computing systems dedicated, in many companies, to analyzing the massive data for getting actionable business insights and gaining business values. It is widely recognized that massive business data has offered a great opportunity to apply statistical and AI tools to discover valuable business patterns and build intelligent models for business benefits. A popular example is mining association rules from massive business transaction data and using the rules in market basket analysis [1, 2], product recommendation [3, 2], fraud detection [4], and many other business operations. However, the size of the big data to be analyzed begins to hit the computational limits of the system to analyze the data. It is a dilemma in today's business that the volume of business data is growing much faster than the capacity of the computing systems used to analyze the data, and the dilemma handicaps the use of a company's valuable data resources to gain business advantages in the market. In this paper, we propose a novel solution to this dilemma.

段落设计与写作

- 段落的长短。
- In general, remember that paragraphing calls for a good eye as well as a logical mind. Enormous blocks of print look formidable to readers, who are often reluctant to tackle them.
 - Therefore, breaking long paragraphs in two, even if it is not necessary to do so for sense, meaning, or logical development, is often a visual help.
- But remember, too, that firing off many short paragraphs in quick succession can be distracting.
 - Paragraph breaks used only for show read like the writing of commerce or of display advertising. Moderation (适度) and a sense of order should be the main considerations in paragraphing.

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语态的使用（主动态与被动态）

- The active voice is usually more direct and vigorous than the passive.
 - I shall always remember my first visit to Boston.
 - My first visit to Boston will always be remembered by me.
 - My first visit to Boston will always be remembered.

语态的使用（主动态与被动态）

- Many a tame sentence of description or exposition（阐述）can be made lively and emphatic by substituting a transitive in the active voice for some such perfunctory（肤浅的）expression as *there is* or *could be heard*.
- There were a great number of dead leaves lying on the ground.
- Dead leaves covered the ground.
- At dawn the crowing of a rooster could be heard.
- The cock's crow came with dawn.
- The reason he left college was that his health became impaired.
- Failing health compelled him to leave college.
- It was not long before she was very sorry that she had said what she had.
- She soon repented（懊悔）her words.

Note, in the examples above, that when a sentence is made stronger, it usually becomes shorter. Thus, brevity is a by-product of vigor（活力）.

肯定语气与否定语气

- Make definite assertions.
 - Avoid tame, colorless, hesitating, noncommittal language.
 - Use the word **not** as a means of denial or in antithesis (对立面), never as a means of evasion.
- He was not very often on time.
- He usually came late.
- She did not think that studying Latin was a sensible way to use one's time.
- She thought the study of Latin a waste of time.

The examples show the weakness inherent in the word **not**. Consciously or unconsciously, the reader is dissatisfied with being told *only what is not*; the reader wishes to be told *what is*.

肯定语气与否定语气

- As a rule, it is better to express even a negative in positive form.

not honest

not important

did not remember

did not pay any attention to

did not have much confidence in

dishonest

trifling

forgot

ignored

distrusted

肯定语气与否定语气

- Placing negative and positive in opposition makes for a stronger structure.
 - Not charity, but simple justice.
 - Not that I loved Caesar less, but that I loved Rome more.
 - Ask not what your country can do for you — ask what you can do for your country.

肯定语气与否定语气

- Statements qualified with unnecessary auxiliaries or conditionals sound irresolute.
- If you would let us know the time of your arrival, we would be happy to arrange your transportation from the airport.
- Applicants can make a good impression by being neat and punctual.
- Plath may be ranked among those modern poets who died young.
- If you will let us know the time of your arrival, we shall be happy to arrange your transportation from the airport.
- Applicants will make a good impression if they are neat and punctual.
- Plath was one of those modern poets who died young.

If your every sentence admits a doubt, your writing will lack authority. Save the auxiliaries *would, should, could, may, might, and can* for situations involving real uncertainty.

用确定性语言

Use definite, specific, concrete language

- Prefer the specific to the general, the definite to the vague, the concrete to the abstract.
- A period of unfavorable weather set in. It rained every day for a week.
- He showed satisfaction as he took possession of his well-earned reward. He grinned as he pocketed the coin.

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删除无用的字或词

Omit needless words

- Vigorous writing is concise. A sentence should contain no unnecessary words, a paragraph no unnecessary sentences. This requires not that the writer make all sentences short, or avoid all detail and treat subjects only in outline, but that every word tell.

1. the question as to whether
2. there is no doubt but that
3. used for fuel purposes
4. he is a man who
5. in a hasty manner
6. this is a subject that
7. Her story is a strange one.
8. the reason why is that

1. whether (the question whether)
2. no doubt (doubtless)
3. used for fuel
4. he
5. hastily
6. this subject
7. Her story is strange.
8. because

删除无用的字或词

Omit needless words

- *The fact that* is an especially debilitating (使非常虚弱) expression. It should be revised out of every sentence in which it occurs.
- As the active voice is more concise than the passive, and a positive statement more concise than a negative one.

1. owing to the fact that
2. in spite of the fact that
3. call your attention to the fact that
4. I was unaware of the fact that
5. the fact that he had not succeeded
6. the fact that I had arrived

1. since (because)
2. though (although)
3. remind you (notify you)
4. I was unaware that (did not know)
5. his failure
6. my arrival

避免重复同一句型

- An unskilled writer will sometimes construct a whole paragraph of sentences of this kind, using as connectives **and, but** , and, less frequently, **who, which, when, where , and while** , these last in nonrestrictive senses.
- A writer who has written a series of loose sentences should recast enough of them to remove the monotony, replacing them with simple sentences, sentences of two clauses joined by a semicolon, periodic sentences of two clauses, or sentences (loose or periodic) of three clauses — whichever best represent the real relations of the thought.

多个要点的逻辑表述

Express coordinate ideas in similar form

- This principle, that of parallel construction, requires that expressions similar in content and function be outwardly similar. The likeness of form enables the reader to recognize more readily the likeness of content and function.
 - The Yellow River is the source of life;
 - The Yellow River is the symbol of culture; and
 - The Yellow River if the precipitation of history.

多个要点的逻辑表述

- Correlative expressions (both, and; not, but; not only, but also; either, or; first, second, third ; and the like) should be followed by the same grammatical construction. Many violations of this rule can be corrected by rearranging the sentence.
- It may be asked, what if you need to express a rather large number of similar ideas — say, twenty? Must you write twenty consecutive sentences of the same pattern? On closer examination, you will probably find that the difficulty is imaginary — that these twenty ideas can be classified in groups, and that you need apply the principle only within each group.
- Otherwise, it is best to avoid the difficulty by putting statements in the form of a table.

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Expressing Caution 谨慎地表达

- One feature that makes academic writing different from other forms of communication is the need **to take care over the degree of certainty or uncertainty** you express. This applies particularly when you are making claims on the basis of what you have read in the sources you are citing, and when you are interpreting research findings.
 - In discussion we may make stronger, more definite statements without being challenged,
 - but in academic writing, we have to adjust the strength of claim to match the evidence we have cited.
- This expression of academic caution is known as hedging （建立篱笆、边界）.

- Reviewer comment

- *In Line 201, the term “perfect” is used. I would like to know how the authors can prove that they have achieved the optimal solution.

200 I-niceDP combines the results of multiple observation points to obtain the correct estimation of the distance distributions of objects, allowing the perfect detection of a large number of clusters. For an accurate solution, multiple observation points $O_i = \{O_1, O_2, \dots, O_d\}$, are randomly generated, which calculates the Euclidean distances between O_i and the objects in the dataset. Finally, by integrating the candidate cluster centroids, i.e., density peaks, at a distance less than a specified threshold, the I-niceDP approach finds
205 candidate cluster centroids corresponding to d observation points, albeit at an increased computing cost.

- *In Line 212, the term “sufficient” is used, but this lacks supporting evidence or proof.

latent knowledge within the data in a more comprehensive manner. Meanwhile, the RSPCA demonstrates that single observation point-based I-niceDP is sufficient under the clear distinction of the high-density areas in the original data space. We consider that each RSP data block is a single-observation process to produce local clustering insights, and the collaborative step is to share information about their memberships among different observation views of RSP data blocks. These two steps are then continued in a collaborative aggregation manner to obtain a global outcome.

Various words are used to describe this feature of academic language.

- The hedged claims are said
 - ‘tentative’, ‘limited’, ‘moderate’ or ‘modest’.
- Claims that are stronger than being justified by the evidence are said to be
 - ‘overstated’, ‘exaggerated’, or ‘immoderate’.
- The cases where a writer has provided no support at all would be criticized as
 - ‘unfounded’ or ‘unwarranted’ claims.

Words used to express caution

Language Box: Expressing caution

Modal verbs	<i>must / should / may / might / could (have... ...ed)</i>
Full verbs	<i>appear to / seem to (have... ...ed)</i> <i>suggest</i> <i>point to</i>
Adverbs	<i>apparently / perhaps / possibly / potentially</i> <i>relatively / comparatively</i> <i>arguably</i>
Nouns	<i>possibility</i> <i>potential</i> <i>(on the) evidence (available)</i>
Adjectives	<i>possible / potential / plausible / probable / likely / not impossible</i> <i>reasonable to assume</i>

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Suggestions to a Satisfactory Style

1. Place yourself in the background.
2. Write in a way that comes naturally.
3. Work from a suitable design.
4. Write with nouns and verbs.
5. Revise and rewrite.
6. Do not overwrite.
7. Do not overstate.
8. Avoid the use of qualifiers.

Suggestions to a Satisfactory Style

9. Do not affect a breezy manner.
10. Use orthodox (正规的) spelling.
11. Do not explain too much.
12. Do not construct awkward adverbs.
13. Make sure the reader knows who is speaking.
14. Avoid fancy words.
15. Do not use dialect unless your ear is good.
16. Be clear.

Suggestions to a Satisfactory Style

- 17. Do not inject opinion.
- 18. Use figures of speech （修辞手段） sparingly.
- 19. Do not take shortcuts at the cost of clarity.
- 20. Avoid foreign languages.
- 21. Prefer the standard to the offbeat （标新立异） .