

DEPARTMENT OF FLUID MACHINERY AND FLUID ENGINEERING
COLLEGE OF WATER RESOURCES AND CIVIL ENGINEERING
CHINA AGRICULTURAL UNIVERSITY

专业英语写作(一) Academic Writing 1 能源与动力工程专业英语(2024秋)

Academic English of Energy and Power Engineering (Fall, 2024)

November 11, 2024

1 Introduction

1.1 Definition of Academic Writing

- ✓ to summarize or synthesize information and ideas gathered from research
- ✓ to explain, compare and contrast, evaluate, or analyze concepts, events, and phenomenon
- ✓ to argue for or against a position in an ongoing debate



For all writings:

- ✓ Unity: a harmonious whole
- ✓ Coherence: well connected, logical relations
- ✓ Emphasis: stress to important ideas
- ✓ Development: elaboration and expansion
- ✓ Clarity: precise, concise, lucid



For Academic Writing:

- It is based on extensive research of proven facts and authoritative testimony.
 - first-hand experiments
 - field research
 - library research
- > The author's voice tends to be objective and neutral.
 - unemotional

For Academic Writing:

- The style tends to be formal.
 - academic periodicals, accurate information

- Appropriate diction.
 - ◆ colloquialisms (口语) and slang expressions be avoided
 - technical terms, abbreviation

For Academic Writing:

- ➤ Syntactical (句法的) level.
 - long complex sentence, simple-present tense, passive voice, non-finite verbs (participles, infinitives, gerunds)

Neat appearance and format

1.3 Differences between the papers published inside and outside China

1.3.1 Papers published in China

- Chinese and English titles,
- Chinese and English abstract,
- Chinese and English keywords,
- The body,
- References,
- Appendix,
- Information about the author

1.3.2 Papers published outside China

- Title,
- Abstract,
- Introduction,
- The body,
- Conclusions and recommendations,
- Acknowledgement,
- References,
- Appendix

Step 1: Choice of Topic

Choose a general topic

Write a rough proposal

Limit the topic to a plausible one

Step 2: Collection and Evaluation of Data

Collect books, journals and research articles

Evaluate data collected

Photocopy data

Prepare note and bibliography cards (书目卡片)

Step 3: Development of Outline

Decide on organization of paper

Arrange notes by subheadings

Develop paper outline

Step 4: Writing

Study and follow outline for first draft

Make adjustments as needed

Step 5: Revision, Editing and References

Revise content and organization

Adjust style and tone

Correct diction, spelling, grammar,

punctuation as necessary

Document all the sources quoted

Step 6: Preparation of Abstract

Observe abstract word limit

Ensure accuracy, brevity and clarity

Step 7: Preparation of Final Details

Assemble all parts

Make final revision

Prepare References section

Write acknowledgements

2 Researching the Topic

2.1 Principles of Title Selection

- ✓ Value Principle (价值原则)
- ✓ Scientific Principle (科学原则)
- ✓ Innovative Principle (创新原则)
- ✓ Feasibility Principle(可行性原则)

2.1 Principles of Title Selection

Notes:

选择时必须要特别注意避免有些题目。比如,不要选择学究式的或者迂腐的题目,也不要选择太个性化和过时的题目,或者没有可用研究素材的题目。

2.2 Methods for Choosing a Title

- ✓ Consult your professor or an expert
- ✓ Participate in academic conferences and academic lectures
- ✓ Select from puzzling problems
- Read books and newspapers
- ✓ Choose from your own interests
- ✓ <u>Literature review</u>

2.3 Ways to Narrow Down Titles

A research novice usually chooses too broad a topic. A good way to avoid this problem is to choose a general topic first and then narrow it to a smaller and more feasible topic.

2.3 Ways to Narrow Down Titles

Example:

- Literature
- Literary Criticism
- ☐ Literary Criticism at Cambridge
- ☐ The Tradition and Development of Literary Criticism at
 - Cambridge

2.3 Ways to Narrow Down Titles

序号	姓名	导师	专业	论文题目
11, 2	*		· · · · · · · · · · · · · · · · · · ·	
1	吴玮林	王福军	水利工程	基于多目标遗传算法的泵站优化调度研究
2	周晓冬	王福军	水利工程	灌溉泵站在线监测与故障诊断研究
3	张方芳	肖若富	水利工程	大型立式离心泵三维设计方法研究
4	方铭坤	刘竹青	水利工程	基于流固耦合的超低比转速离心泵振动特性研究
5	赵尉邦	黎耀军	水利工程	轴流泵空化诱导失速的机理研究
6	孙钰荣	姚志峰	水利工程	空蚀凹坑对空泡溃灭影响研究
7	邹圣可	姚志峰	水利工程	水翼流固耦合锁频机理研究
8	满哲	刘竹青	能源动力	超低比转速离心泵叶轮载荷加载方式研究
9	宋慧	黎耀军	能源动力	离心泵内进口管回流对其内部流动特影响的数值
9				模拟
10	马泽瀛	杨魏	能源动力	基于变频调控的多水泵优化调度运行
11	管中华	李小芹	能源动力	基于 1D-MOC 抽水蓄能电站一管两机甩负荷瞬变过
				程的数值研究
12	刘源	钟强	能源动力	激光诱导空泡冲击波与固体壁面相互作用研究

序号	姓名	导师	专业	论文题目
1	张颢晖	严海军	水利工程	基于圆形喷灌机移动滴灌系统的土壤水分入渗试 验与数值模拟
2	张建鹏	陈鑫	水利工程	基于混合两相模型的近岸泥沙运动数值研究
3	于航	陈鑫	水利工程	波浪作用下南中国海某珊瑚沙岛礁岸滩运动特性 的数值研究
4	曾海艳	周凌九	水利工程	含沙翰水管路优化调度模型研究
5	封顶梁	唐学林	水利工程	基于遗传算法灌溉管网的多目标优化及其瞬变过 程研究
6	韩潇琳	钟强	水利工程	基于卫星视频的大尺度流场测量
7	梁博华	丁涛	水利工程	高原区温室内自然通风流场分布及通风口优化
8	郑若琳	杨魏	农业水土工程	基于 CFD 的温室气流场模拟及优化设计
9	王忠伟	严海军	土木水利	圆形喷灌机下不同水分监测方法分析及冬小麦灌 水制度研究
10	郭辉	严海军	土木水利	基于圆形喷灌机变量灌溉下不同土壤质地对苜蓿 生长及品质的影响
11	李妥	丁涛	能源动力	前置导叶对农用轴流风机性能影响研究
12	韩恒	唐学林	能源动力	起伏管阀系统充水过程一维-三维耦合数值研究
13	孙成凡	徐云成	能源动力	沼蛤附着对水利工程糙率影响的数值模拟研究

2.4 Purposes of Title

- ✓ Attracting the readers' attention
- ✓ Aiding in information retrieval (信息检索)
- ✓ Facilitating review and layout

2.5 Standards for Good Title

- ✓ Accuracy (精准)
- ✓ Brevity (简洁)
- ✓ Clarity (清晰)

2.6 Formats for Title

Example:

- OSCILLATIONS IN GRANULAR DYNAMICS
- Structural Analyses Based on a Point Charge Model
- ☐ Fast atom bombardment mass spectra of nebramycin
- ☐ Coronary Artery Disease: Diet and patient Health
- (within 15 words)

2.7 Tables and Figures

In liberal arts or scientific papers, <u>tables and</u> <u>illustrations</u> are frequently used to help readers understand the content. They are more efficient in conveying information than verbal descriptions.

- ✓ 表格应该是独立完整的,也就是说,它能够相对于文章 独立存在。
- ✓ 表格的位置通常在它相关描述的位置。
- ✓ 每一个表格都一个编号和题目,已编号的题目放在表格的上方。
- ✓ 表格的题目应该清晰、简洁、完整和准确。

- ✓ 表格和图表标题的样式与前面所给标题的样式相同。
- ✓ 列标题的样式。
- ✓ 表格的注释。
- ✓ 不要在表格中重述你在曲线图或柱状图中已说明的信息。
- ✓ 表格中列中的数字比行中的数字更能让读者进行比较。

Table 1. Drag force for the fully-resolved case, porosity cases and the solid barrier case.

α	β	d ₅₀ (mm)	K (m ²)	K_i (m ²)	F_d/F_{fully}	$\varepsilon_{u/u_0,up}$	$\varepsilon_{u/u_0,down}$	$\varepsilon_{k/u_0^2,up}$	$\varepsilon_{k/u_0^2,down}$
1000	1.1	32	2.34×10^{-6}	2.31×10^{-8}	1.111	0.065	0.117	0.341	1.295
1000	1.1	19	8.24×10^{-7}	1.37×10^{-8}	1.157	0.075	0.146	0.337	1.273
1000	1.1	1	2.28×10^{-9}	7.22×10^{-10}	1.113	0.131	0.162	0.673	2.570
200	2	32	1.17×10^{-5}	1.27×10^{-8}	1.134	0.070	0.129	0.347	1.267
200	2	19	4.12×10^{-6}	7.55×10^{-8}	1.153	0.079	0.146	0.369	1.252
200	2	1	1.14×10^{-8}	3.97×10^{-10}	1.148	0.126	0.168	0.649	2.584
solid	barrier		0	0	1.246	0.145	0.238	0.636	3.123

表 5-1 混流式水轮机的主要参数[84]

参数名称	符号	数值	单位
额定水头	H	77.5	m
额定出力	N	45.13	MW
转轮直径	D_1	2.72	m
叶片数	Z	14	
固定导叶数	Z_z	24	
活动导叶数	Z_0	24	
转速	n	250	r/min

Graphs

--- can be used to compare two variables

Drawings and Photographs

--- to illustrate organisms, experimental apparatus, models of structures, etc.

Types of figures

Line charts

Bar charts

Pie charts

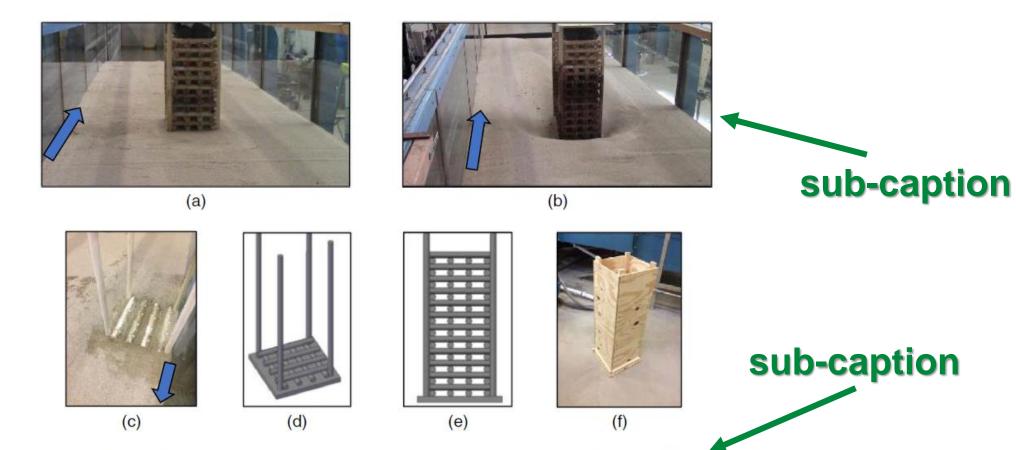


Fig. 1. (a) Porous structure at midchannel with initial, plane; (b) porous structure at midchannel with final, scoured bed; (c) initial porous structure burial near the flume wall; (d) isometric rendering illustrating the stocking of structure elements; (e) front view of the porous structure; and (f) nonporous, control structure. Arrows indicate flow direction in the flume.

caption

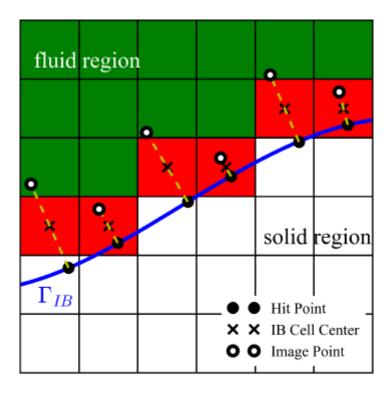


FIGURE 2 Schematic view of IB representation: IB cell centers (black cross), hit points (black dots), image points (black circles), IB cells (red filled), live cells (green filled), and dead cells (white filled). Immeresed interface Γ_{IB} is represented by the blue curve.

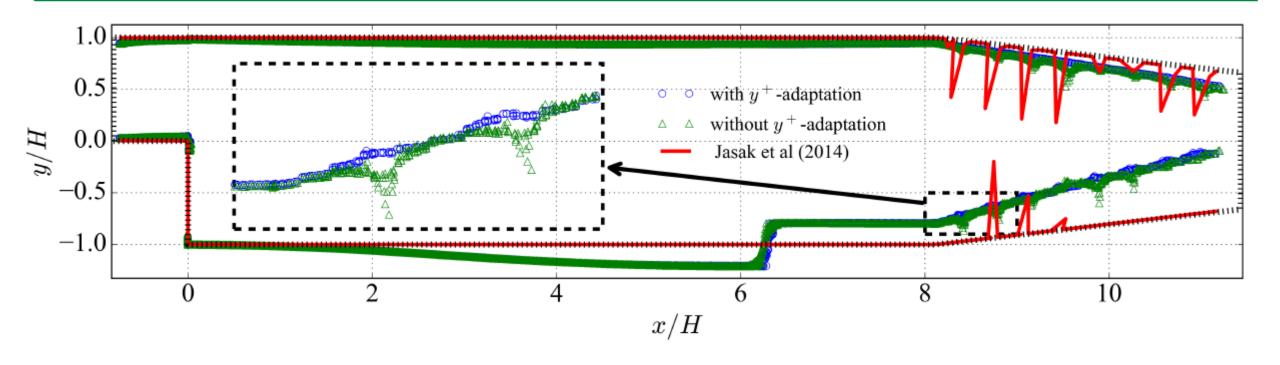
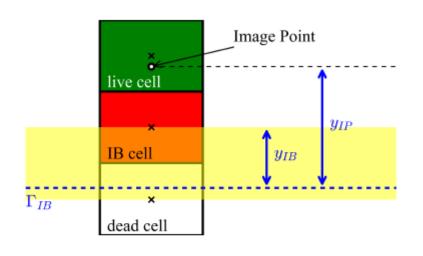
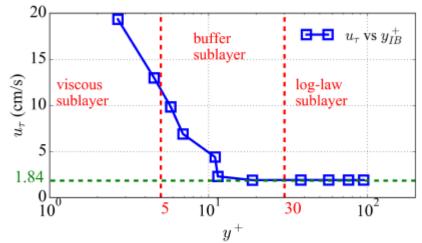


FIGURE 10 Wall shear stress distribution along the lower and upper walls. Wall shear is plotted using line or scatters in which their distance to the wall is proportional to the magnitude.





- (a) 1D schematic view of wall distances from IB cell center and image point.
- (b) Simulated shear velocity as a function of $y_{\rm IR}^+$.

FIGURE 3 Effect of IB cell wall distance on the simulated shear velocity. y_{IB}^+ and y_{IP}^+ denote the dimensionless wall distance of IB cell center and image point, respectively. The immersed boundary Γ_{IB} can be moved vertically in the yellow region to change the IB cell wall distance.

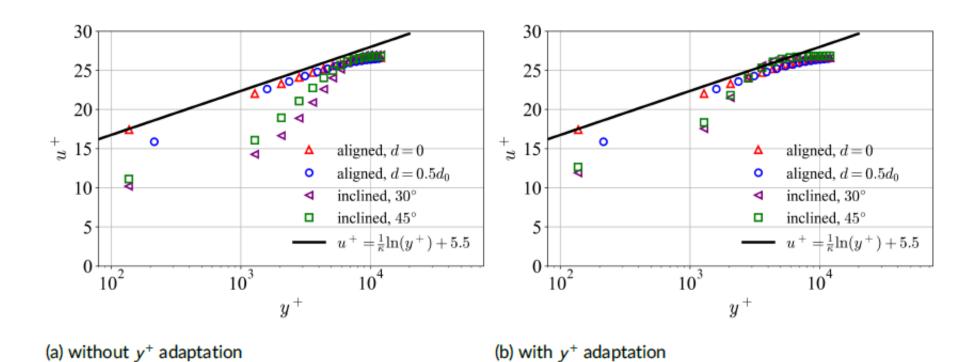


FIGURE 7 Tangential velocity profiles at x/L = 0.99 of a smooth flat plate. d denotes the distance between near-boundary cell center and the plat. d_0 denotes the size of the near-boundary cell.



3 Proper reference

3.1 Terms to know

- ➤outside source: (n.) something read, watched, looked at, or listened to by an author and used to create a written work
 - ✓ books
 - ✓ newspaper, journal and magazine articles
 - ✓ websites
 - √film, television and radio broadcasts
 - ✓ interviews
 - ✓ charts, graphs, tables and other figures

3.1 Terms to know

- ➤reference: (v.) to paraphrase, summarise or quote an outside source —reference (n.)
- ➤in-text citation: (n.) a note within the body of a written work that explains which outside source was used in a particular reference
- reference list: (n.) a list appearing at the end of a written work which provides information about all the outside sources used in that work

3.1 Terms to know

- ➤abbreviation: (n.) a shortened form of a word or phrase —abbreviate (v.), abbreviated (adj.)
- **➢initial**: (n.) the first letter of a name
- ➤italicise: (n.) to print or write something in a style in which letters lean
 to the right —italics (n.), italicised (adj.)
- ➤underline: (v.) to draw a line under a word or group of words underlined (adj.)

3.1.1 Punctuation marks to know

```
>single quotation marks: ''
                                    >apostrophe: '
double quotation marks: " "
                                    >colon: :
>brackets: ( )
                                    >semicolon: ;
>square brackets: []
>comma: ,
>full stop or dot: .
>question mark: ?
```

>exclamation point: !

Plagiarism refers to taking someone else's words or ideas and using them as your own.

Plagiarism can take a variety of forms

- ✓ Using someone else's writing and claiming it is your own
- Copying an outside source word-for-word (quoting) without providing proper references
- Copying an outside source and changing a few words and phrases, or the order in which ideas are presented
- Using ideas from an outside source (paraphrasing or summarising) without providing proper references
- ✓ Allowing another student to copy your words or ideas

In Western institutions, plagiarism is considered the worst of academic offenses and is punished accordingly

- ✓ A student who plagiarises typically receives a failing grade for the module and may not be allowed to re-take it
- ✓ A student who plagiarises a second time will expelled from school

Excuses that won't work

- ➣"I meant to put it into my own words, but I just "didn't have enough time."
- ➤ "My English is so poor I couldn't write it myself."
- > "The outside source said it better than I ever "could."
- ➤ "In China it is considered disrespectful to change "the words of esteemed authors."
- ➤ "Copying other people's words is allowed and "even considered normal in China."

Excuses that won't work

- > "My Chinese teachers told me to do it that way!"
- ➤ "I didn't know I had to use referencing for this "assignment."
- ➤ "I thought the Internet didn't need to be "referenced because it's free."
- ➤ "My friends do it this way, and they have never "gotten into trouble."

3.3.1 Why should I reference?

- ✓ To acknowledge that you have used other people's words and ideas
- ✓ To show that you are knowledgeable about your subject and have done appropriate research
- ✓ To strengthen your writing by providing references that support your argument
- ✓ To avoid getting into serious trouble!

3.3.2 What should I reference?

- ✓ Another person's spoken or written words
- ✓ Another person's ideas, opinions or theories
- ✓ Any statistics you did not calculate by yourself
- ✓ Any graphs, tables, images or other figures you did not create by yourself
- ✓ Any facts that are not common knowledge*

^{*}Common knowledge refers to facts that can be found in numerous places and are likely to be known by a lot of people, e.g., "John F. Kennedy was elected President of the United States in 1960".

3.3.3 How should I reference?

Every use of an outside source must be clearly identified as such in two ways

- ✓ For most in-text citations, place the author's surname and the year of publication, separated by a comma, in brackets following any use of an outside source
- ✓ For the reference list, create a separate entry for each outside source; arrange them alphabetically according to the first word of the entry (usually the author's surname)

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3.3.3 How should I reference?

- ✓ For most in-text citations, place the author's surname and the year of publication, separated by a comma, in brackets following any use of an outside source
- ✓ For the reference list, create a separate entry for each outside source; arrange them alphabetically according to the first word of the entry (usually the author's surname)

The format for in-text citations and reference list entries varies somewhat depending on the type of outside source

Book with one author

In-text citation: (Author, year)

 Researchers have warned that young people can easily spend too much time online (Stephens, 2004).

Reference list: Author, A. (year). *Title of book: subtitle of book.* Place: Publisher.

• Stephens, C. (2004). *Inside the internet*. Beijing: Foreign Language Teaching and Research Press.

Book with two authors

In-text citation: (Author & Author, year)

• People are inherently interested in themselves; in fact, "one reliable way of making people care is by invoking self-interest" (Heath & Heath, 2007).

Reference list: Author, A. & Author, B. (year). *Title of book: subtitle of book*. Place: Publisher

 Heath, C. & Heath, D. (2007). Made to stick: why some ideas survive and others die. New York: Random House.

Print or electronic journal article

In-text citation: (Author, year)

In 2004 Americans spent \$186 billion on products made in China (Elliott, 2005).

Reference list: Author, A. (year). Title of article. *Name of Journal*, volume(issue), #-#.

• Elliott, M. (2005). Small world, big stakes. Time, 165(26), 30-34.

Newspaper article

In-text citation: (Author, year)

• More and more American universities and colleges are sending their students to Hollywood to complete internships in the film industry (Gordon, 2008).

Reference list: Author, A. (year, Month day). Title of article. *Name of Newspaper*, p. #.

• Gordon, L. (2008, October 6) A semester abroad...in Tinseltown. *Los Angeles Times*, p. 1.

Online newspaper article

In-text citation: (Author, year)

 Amity Printing Company in Nanjing, which may soon become the largest producer of Bibles in the world, is China's only legal Bible printer (Ni, 2008).

Reference list: Author, A. (year, Month day). Title of article. *Name of Newspaper*. Retrieved from http://www.domain.com/directory/ index

 Ni, C. (2008, June 21). China set to become top Bible maker. Los Angeles Times. Retrieved from http://articles. latimes.com/2008/jun/21/%20world/fg-bible22

Web article

In-text citation: (Author, year)

• Some people think advertising and marketing are identical, but the former is actually just one small part of the latter (Lake, 2008).

Reference list: Author, A. (year). *Title of article*. Retrieved Month day, year, from http://www.domain.com/directory/index

• Lake, L. (2008). *Marketing or advertising: what's the difference?* Retrieved November 11, 2008, from http://marketing.about.com/cs/advertising/a/marketvsad.htm

3.5 Additional tips

- Occasionally certain information is not available and may be omitted from the reference list entry
 - Subtitle of a book
 - Place of publication for an electronic book
 - Page numbers for online-only journal articles

➤ When there is no author for a source, the title (or a shortened version of the title) replaces the author's name in the in-text citation

3.5 Additional tips

- The author's name is not required in the in-text citation if it is already mentioned in the text
- ➤If a book was published in a well-known city, list only the city; otherwise, list both the city and U.S. state or the city and country

For titles of books, chapters, articles, films, videos, podcasts and blog posts, capitalise only the first letter of the first word

3.5 Additional tips

- For names of journals, magazines, newspapers, publishing houses and production companies, capitalise the first letter of each important word
- ➤ People using Harvard APA referencing may record information slightly differently; speak with your professor for exact instructions on how to reference assignments in his or her class
- ➤If you're not sure how to reference something, just ask!

➤Q: How many words do I need to change before something becomes my own writing?

A: Don't think of it as "changing words." Rather, when you find an idea you want to include in your writing, use the steps we will learn in class to write a good paraphrase. You will see that you are less focused on "changing words" than on expressing yourself clearly in your own words.

➤Q: If I am not sure if I need to reference something, how can I decide?

A: If you are not sure if you should or should not reference something, then you should. Referencing outside sources does not reduce the quality of your writing; in fact, your professors will be pleased with the extra reading you have done and your ability to incorporate others' ideas it into your own arguments.

➤Q: If I had an idea before I started researching and then I found the same idea while researching, do I have to reference it?

A: Yes, you should reference the idea. You might have had the idea first, but once you read about it you probably learned more than what you knew at first.

- >Q: Do I need to reference ideas discussed in class or lecture?
- A: Yes. Anything that did not come from your own head should be referenced, including ideas discussed in class or lecture. In this case you do not need to add an entry to the reference list, but you should give credit in the body of the text or with an in-text citation.

^{*}Though some professors will allow you to use information from class without referencing it, you should check with your professor first.

- ➤Q: Do I need to reference ideas discussed with friends, classmates and others outside of class?
- ➤A: Yes. Anything that did not come from your own head should be referenced, including personal communication with others. In this case you do not need to add an entry to the reference list, but you should give credit in the body of the text or with an in-text citation.

Ryan doesn't have time to write his biochemistry paper on vitamin C because he is too busy spending time with his girlfriend Lucy. Last semester Lucy wrote a paper on the same topic for a different professor. Lucy gives Ryan a copy of her paper. Ryan puts his name at the top of the paper and turns it in.

Angela has to write a paper on World War II for history class. She takes an article she finds online, changes the words a bit, and moves the sentences around. She references the outside source in her reference list and includes in-text citations.

Pam uses some of the ideas discussed in class to write her English paper. Since the ideas were discussed openly with the professor listening, she doesn't reference where the ideas came from.

Lisa talks with her friends about Shakespeare's play Hamlet and then uses some of the ideas they discussed in her English paper. Since she thinks she really could have come up with the ideas on her own, she does not reference them.

Kelly reads three books, a newspaper article and a Web article to research trends in advertising for her marketing paper. She uses some ideas from each outside source. Because she doesn't copy the exact words, she doesn't include in-text citations, but she does list each outside source in her reference list.

Amanda puts a graph showing population growth in her social sciences paper. The graph uses statistics she read in a journal article. She lists the journal article in her reference list, but since she created the graph herself, she does not include an in-text citation.

Toby reads a newspaper article on Amazon.com's marketing strategy. The article helps him formulate his own opinions about what the company does well and what they need to improve. When giving his own opinion in his paper, he backs up those opinions with information from the article. Since he is referencing an outside source, he provides an in-text citation and lists the article in his reference list.

3.8 如何避免英文写作中的剽窃问题

3.8 如何避免夹文写作中的剽窃问题^{ith 3 simple tricks?}

3.8 如何避免英文写作中的剽窃问题

3 How to guote?

3.8 如何避免英文写作中的剽窃问题。如何避免英文写作中的剽窃问题。

- 1. Start at a different point from the original
- 2. Use synonyms!
- 3. Change the sentence structure
- 4. Break up long sentences or combine shorter ones

paraphrase是最重要的一种英文技能:所谓的用英文思考最终就体现在能用不同的句子表达相同的东西。

Paraphrase也就是换种方式去表达相同内容。

释义;解释;意译

以下是一些常见的paraphrase的方法:使用同义词,转换词性,转换语态,句子关系替换等。具体例子如下,划线部分皆有替换关系,同学们仔细体会:

1.使用同义词:

It is worth looking at one or two aspects of the way a mother behaves towards her baby.

paraphrase:

It is <u>useful</u> to <u>observe</u> several <u>features</u> of <u>how</u> a mother <u>acts</u> when she is with her <u>small child</u>.

以下是一些常见的paraphrase的方法:使用同义词,转换词性,转换语态,句子关系替换等。具体例子如下,划线部分皆有替换关系,同学们仔细体会:

2. 句子关系替换:

<u>Similarly</u>, the muscles will not grow in length <u>unless</u> they are attached to tendons and bones so that as the bones lengthen, they are stretched.

paraphrase:

<u>Likewise</u>, <u>if</u> the muscles are not attached to tendons and bones so that as the bones lengthen, they are stretched, they will not grow in length.

以下是一些常见的paraphrase的方法:使用同义词,转换词性,转换语态,句子关系替换等。具体例子如下,划线部分皆有替换关系,同学们仔细体会:

3. 转变词性:

The bomb <u>exploded</u> and caused many casualties.

paraphrase: The explosion caused many casualties.

以下是一些常见的paraphrase的方法:使用同义词,转换词性,转换语态,句子关系替换等。具体例子如下,划线部分皆有替换关系,同学们仔细体会:

4. 改变语态

We can <u>relate</u> a study of this kind <u>to</u> texts in other media too **paraphrase:**

A study of this kind can be related to texts in other media too.

以下是一些常见的paraphrase的方法:使用同义词,转换词性,转换语态,句子关系替换等。具体例子如下,划线部分皆有替换关系,同学们仔细体会:

5. 综合

It has <u>long</u> been known that Cairo is the most <u>populous</u> city <u>on earth</u>, <u>but</u> no-one <u>knew</u> <u>exactly</u> how <u>populous</u> it was until <u>last month</u>.

paraphrase:

Although Cairo has been the world's most heavily populated city for many years, the precise population was not known until four weeks ago.

不管英文还是中文文献:

- 用心读完最关键的一小段文字
- 合上书本(盖住这段文字),重新回忆这段文字
- 用自己的语言重述这段话,并写下来
- ▶ 修改写下来的这段话