
Technical writing for young engineers

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Part 1: English vs Chinese

Technical writing

道可道，非常道。

Noun

Verb

Noun

Noun

Verb

Adjective

Verb

Noun

Adjective

Technical writing

		<input checked="" type="checkbox"/>
How many will come?	John and me will come.	
Nice to meet you.	Me too.	
Are you not a police officer?	Yes, I am not.	
John got a job?	He got a job in IBM.	
How old is your boss?	He is a 40 years old.	

Technical writing

Chinese writers tend to

1. Miss out articles (“a, an, the”)

Technical writing

Before processing RE inspection, self checking should be conducted by site project and engineering team in order to reduce possibility of non-compliance with layout plan.

(logbook sample)

Missing articles

Before Flat Handover to property management department, there were several times of pre-handover inspection by them to inspect quality, functionality and ease of use of the works.

(logbook sample)

Technical writing

Chinese writers tend to

1. Miss out articles (“a, an, the”)
2. Use future tense excessively

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2. Use future tense excessively

- a. Be responsible for (管理處會處理一般投訴....)
- b. Be able to (愛斯基摩人會建冰屋...)
- c. Plan to (在2018年政府會...)
- d. Lead to (延遲醫治會加重病情..)
- e. Is true in general (冰塊會溶掉)

Avoid an excessive use of future tense

Excessive use of future tenses:

- weakens sentences
- adds an unnecessary words
- Confuses readers

In ideal practice, the interior fitting out tender will be awarded soon after the commencement of plastering stage...

(Logbook sample)

The way to tackle this problem is to inform the relevant subcontractor to submit a new design report and calculation which will be reviewed by RE for acceptance.

(Logbook sample)

In the site, slump zone will be erected to the slump test when cement mixer truck arrived.

(Logbook sample)

Avoid an excessive use of future tense

“The gauge A231 will indicate the water tank’s pressure level.”



“After reading this report, the project team will determine the appropriate actions.”



“The safety team will regulate all safety rules and handle licensing issues with the fire department.”



Avoid an excessive use of future tense

“This presentation will outline the stages of staff evacuation in case of a fire.”



“For each HKD7.8, you will get USD1.”



Technical writing

Chinese writers tend to

1. Miss out articles (“a, an, the”)
2. Use future tense excessively
3. Place phrases which indicate time at the beginning of paragraphs

Technical writing

The Chief Executive announced on 22 June 2009 that the Government would take the lead in making Hong Kong a green city through a number of measures including the expansion of green procurement in the Government.

(Source: Environment Bureau Circular Memorandum)

Technical writing

Chinese writers tend to

1. Miss out articles (“a, an, the”)
2. Use future tense excessively
3. Place phrases which indicate time at the beginning of paragraphs
4. Place main ideas in the middle, instead of at the beginning, of paragraphs

Technical writing

When a design team consists of engineers and consultants from different organizations, the design development process needs to be carefully coordinated.

Before the first draft of a drawing is sent to members of the team, a decision is made about who needs a copy. Sometimes, a drawing will only be issued to certain specialists in the team. Sometimes, it will be circulated to all the team members.

After team members have received a drawing, they can comment on it, and may ask for the design to be changed. Following these comments, the drawing will be revised. With each new revision, written notes are added to the drawing. These describe the amendments that have been made.

(source: Mark Ibbotson)

Technical writing

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(source: Mark Ibbotson)

Technical writing

正當人人感嘆全球化帶來的種種便利之際，著名作家龍應台提醒這種全球化和網絡化「像海嘯一般逼到了你的書房門口」，無聲無息的把我們這代人一直堅信的價值基座瓦解成「不斷移動的流沙」，使我們踩着「不是堅定的土地」。這是屬於我們這代人的迷惘...

網紅現象只是冰山一角，全球化和網絡化是如何把曾經掌握實際權力的菁英分子都給扯下來？龍應台認為，在以往的架構上，總統、國會、大學、媒體等菁英都需要依靠他們的「知識、或智慧、或技術、或能力的或多或少的壟斷」才可行使相對性的權力，但網路化的一個大浪打來，把過往的所有架構推得一乾二淨，甚至連「國家這個結構的權力已經先繳械了」...

龍應台稱現在這個被網絡化改變的年代為「變局」，在這一個大環境下，她比喻知識分子正面對「一個大浪打來，你還沒站穩，下一個更大的浪已經把你打倒在地」的情況。在網絡化的時代，年青人每天接觸的是一則接一則的資訊，訊息之多令人目不暇給，所以龍應台說：「別說年輕一代不讀經典作品了，他根本不讀整本書了，他只讀碎片...

(灼見文化)

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網紅現象只是冰山一角，全球化和網絡化是如何把曾經掌握實際權力的菁英分子都給扯下來？龍應台認為，在以往的架構上，總統、國會、大學、媒體等菁英都需要依靠他們的「知識、或智慧、或技術、或能力的或多或少的壟斷」才可行使相對性的權力，但網路化的一個大浪打來，把過往的所有架構推得一乾二淨，甚至連「國家這個結構的權力已經先繳械了」...

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(灼見文化)

Technical writing

About this training:

- Avoid common writing mistakes
- Write efficiently
- Write to project a professional image

Part 2: Common mistakes to avoid

Avoid common verb/noun disagreement

Avoid common verb/noun disagreement

One of the most common grammatical errors is disagreement of verb and noun.

*The list of parts [is/are] provided in the user's manual
(the list is provided...).*

*The CEO or the CFO [is/are] arriving tomorrow for the shareholders' meeting
(one of them is arriving...).*

*Eating or drinking [is/are] not allowed
(either one is not allowed).*

*Food and drink [is/are] not permitted in the library
(they are not permitted).*

*The chief engineer, along with his team, [inspect/inspects] the plant
(The chief engineer inspects the plant along with his team).*

Avoid common verb/noun disagreement

Exercise caution when you use correlative conjunctions (e.g. either ... or, neither ... nor, not only ... but also). Use the closer of the two antecedents to determine whether a singular or plural pronoun should be used.

Either a single 3-volt battery or two 1.5-volt batteries can drive the motor when [it is/they are] properly installed.

Either two 1.5-volt batteries or a single 3-volt battery can drive the motor when [it is/they are] properly installed.

Dangling modifier

Dangling modifier

因為有人幫襯，老闆將餐廳關門。

Dangling modifier

When compared with traditional mobile crane lifting method, the day required for overnight work reduced by 60%. This greatly enhance the site safety.

The [new] method can reduce the overnight workday by 60%. As a higher rate of accidents is associated with night-time work, this method can greatly enhance the overall site safety record.

(logbook sample)

Dangling modifier

Before processing RE inspection, self checking should be conducted by site project and engineering team in order to reduce possibility of non-compliance with layout plan.

Who processes?

X = Self-checking

Y = site project and engineering team

Before processing **the** RE inspection, **the** site project and engineering team should conduct the self checking in order to reduce **the** possibility of non-compliance with **the** layout plan.

(Logbook sample)

Dangling modifier

By adopting placing boom, concrete can be placed faster and more uniformly with pinpoint accuracy.

Who adopts?

Placing boom can place concrete uniformly and precisely with great efficiency.

(Logbook sample)

Part 3: How to write stronger sentences

Make your points clear

Make your points clear

Working at light rail even means only working at night is allowed.

The light rail area is subject to access control and only night time work is permitted.

(logbook sample)

Make your points clear

When compared with traditional mobile crane lifting method, the day required for overnight work reduced by 60%. This (?) greatly enhance the site safety.

The [new] method can reduce the overnight workday by 60%. As a higher rate of accidents is associated with night-time work, this method can greatly enhance the overall site safety record.

(logbook sample)

Make your points clear

“Preliminarily, we would like to propose the following work sequence for your **consideration, coordination and discussion.**”

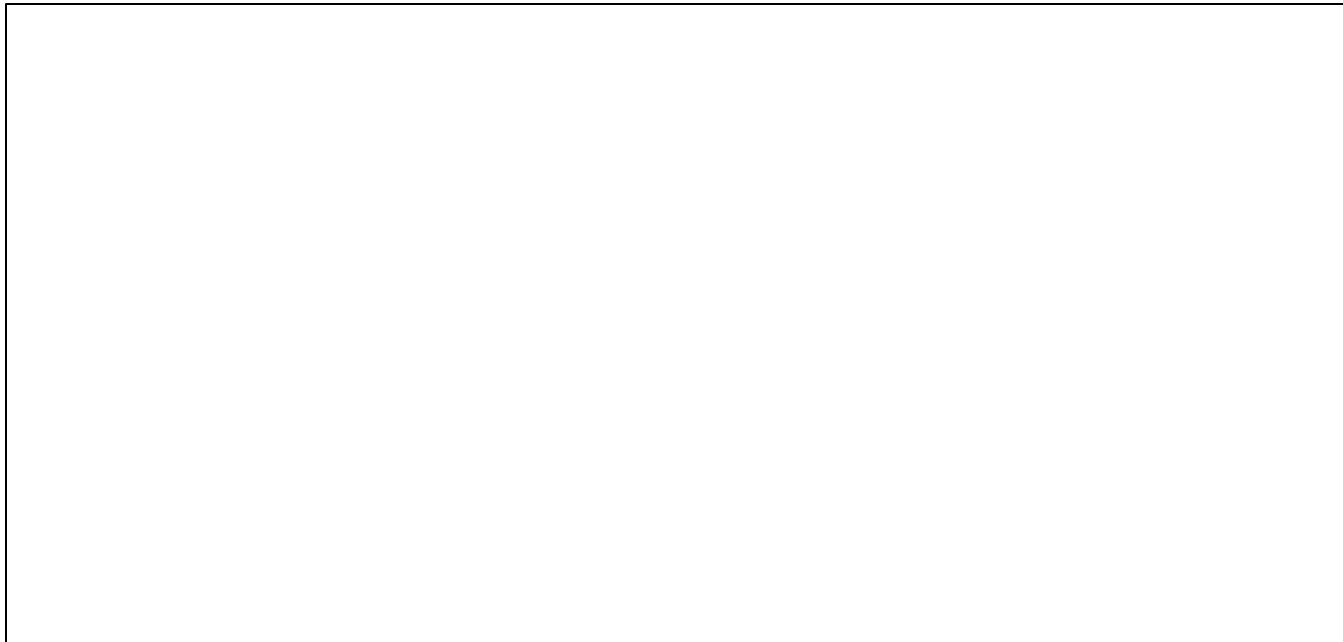
Consideration = to approve? to analyze? to be notified?

Coordination = with you staff?

Discussion = with whom?

Class exercise

Preliminarily, we would like to propose the following work sequence for your **consideration, coordination and discussion** :



Place subject, verb and object close together

Place subject, verb and object close together

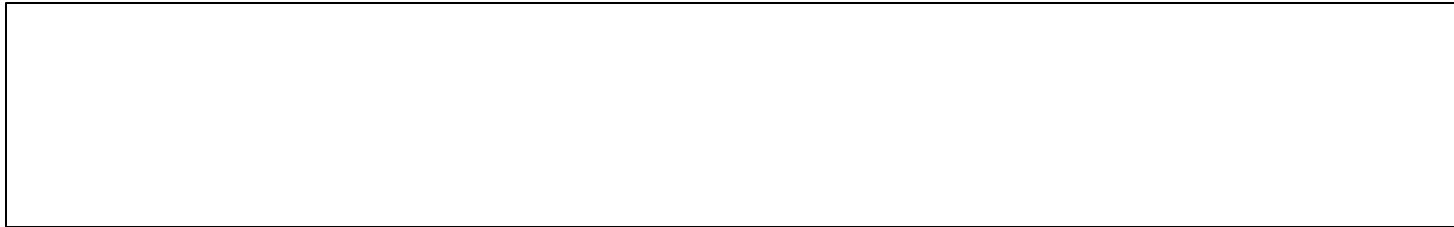
Exercise: Comment on the following paragraph

The tender assessment panel will evaluate tender offers which can meet the mandatory features and recommend either the lowest conforming offer (for a tender without a marking scheme) or the highest scoring conforming offer (for a tender with a marking scheme) for acceptance.

The tender assessment panel will evaluate tender offers that can meet the mandatory features and recommend for acceptance either the lowest conforming offer (for a tender without a marking scheme) or the highest scoring conforming offer (for a tender with a marking scheme)

Place subject, verb and object close together

“The sump pump, installed in September last year after a serious flooding in the main warehouse, has broken down.”

A large, empty rectangular box with a thin black border, intended for the user to analyze the sentence structure above it.

The key message goes first

The key message goes first

Contrast the following sentences:

Despite making several errors in the first response, **the engineers at Fukushima Daiichi Nuclear Power Station contained the radioactive materials.**

Vs

The engineers at Fukushima Daiichi Nuclear Power Station contained the radioactive materials, despite making several errors in the first response.

The key message goes first

China issued new rules last month that would require the world's carmakers to sell more alternative-energy cars here if they want to continue selling regular ones.

(NY Times, 11 Oct 2017)

(1) China issued new rules last month

(2) that would require the world's carmakers to sell more alternative-energy cars here

(3) if they want to continue selling regular ones.

Key message > Additional Info > Additional Info

The key message goes first

From my observation, cantilever beams, beam-column joint and addition rebars near placing boom were the location that most likely to make mistake.

(Logbook example)

The key message goes first

From my observation, cantilever beams, beam-column joint and addition rebars near placing boom were the location that most likely to make mistake.

From my observation, locations where mistakes mostly likely to occur include cantilever beams, beam-column joint and addition rebars near placing boom

(Logbook example)

The key message goes first

The Chief Executive announced on 22 June 2009 that the Government would take the lead in making Hong Kong a green city through a number of measures including the expansion of green procurement in the Government.

(Government sample)

The key message goes first

(1) The Chief Executive announced on 22 June 2009 that (2) the Government would take the lead in making Hong Kong a green city (3) through a number of measures including the expansion of green procurement in the Government.

They key message?

Use active voice

Use active voice

In technical writing, more than 70% of sentences should be in active voice. The other 30% in passive voice is for describing order of operations etc.

The active voice has the following advantages over the passive voice:

- Readers understand information much better
- Information in active voice is more assuring
- Active voice helps reduce word count

Use active voice

Writing sample

After investigation, control circuit was checked normal. Suspected internal leakage in the hydraulic actuator cylinder. Hydraulic system will be further investigated in opportunity outage. Opening timer was temporarily extended from 45s to 55s for further investigation. PS2 was declared available at 05:50 hours on the same day. Recorder is now set up to PS2 for further monitoring.

Use active voice

After investigation, control circuit was checked normal. Suspected internal leakage in the hydraulic actuator cylinder. Hydraulic system will be further investigated in opportunity outage. Opening timer was temporarily extended from 45s to 55s for further investigation. PS2 was declared available at 05:50 hours on the same day. Recorder is now set up to PS2 for further monitoring.

The engineering team on duty tested the control circuit and found its function to be normal. The team suspected that there was an internal leakage in the hydraulic actuator cylinder, and recommended a full analysis on the hydraulic system in the next schedule outage. The site engineer approved an temporary extension on the timer from 45s to 55s to facilitate further investigation. PS2 became available at 05:50 hours on the same day and connected to a recorder for performance analysis.

Use active voice

The way to tackle this problem is to inform the relevant subcontractor to submit a new design report and calculation which will be reviewed by RE for acceptance.

(Logbook sample)

Use active voice

“The quality of the construction is affected by the budget.”

“Pressure overbuild is prevented by three relief valves.”

“Fuel-cost savings are realized through the installation of thermal insulation.”

Use active voice

“It was determined by the committee that immediate action was required.”

“Control of the steam supply is provided by the shutoff valves.”

“In our design, the pressure is driven by the temperature control.”

Use parallel structure

Use parallel structure

Contrast the following two statements:

“This report **summarizes** my experience over a 2-year training period, **listing** my HK and overseas assignments, and **is written** to fulfill the membership requirements of HKIE.”

VS

“This report summarizes my experience over a 2-year training period, lists my HK and overseas assignments and fulfills the membership requirements of HKIE.”

Use parallel structure

The most important consideration in a tender is to meet the design with cooperated and safe method, no conflicts with other contract, clear and straight wordings and sufficient support of drawings and specifications etc.

(Logbook sample)

Use parallel structure

The most important consideration in a tender is to meet the design with cooperated and safe method, no conflicts with other contract, clear and straight wordings and sufficient support of drawings and specifications etc.

The most important consideration in a tender is:

A = to meet the design with cooperated and safe method

B = no conflicts with other contract

C = clear and straight wordings

D = sufficient support of drawings and specifications etc.

The key aspects of a good tender include A, B C and D...

(Logbook sample)

Use parallel structure

The most important consideration in a tender is to meet the design with cooperated and safe method, no conflicts with other contract, clear and straight wordings and sufficient support of drawings and specifications etc.

The most important consideration in a tender is:

A = to meet the design with cooperated and safe method

B = no conflicts with other contract

C = clear and straight wordings

D = sufficient support of drawings and specifications etc.

The key aspects of a good tender include A, B C and D...

The key aspects of a good tender include meeting all design and safety specifications, no conflicts against other contracts, clear and precise language and sufficient supports by drawings and specifications etc.

(Logbook sample)

Use parallel structure

When a fresh concrete has good workability, it means that it is easy to compact into the formwork, around steel reinforcement and be pumped.

(Logbook sample)

Use parallel structure

When a fresh concrete has good workability, it means that it is easy to compact into the formwork, around steel reinforcement and be pumped.

When a fresh concrete has good workability, it means that it is easy to A, B and C.

A = to compact into the formwork

B = around steel reinforcement

C = be pumped

(Logbook sample)

Use parallel structure

When a fresh concrete has good workability, it means that it is easy to compact into the formwork, around steel reinforcement and be pumped.

When a fresh concrete has good workability, it means that it is easy to A, B and C.

A = to compact into the formwork

B = around steel reinforcement

C = be pumped

Concrete with a high degree of workability means it is easy to shape into a formwork, fuse with steel reinforcements and work with pumping

(Logbook sample)

Use parallel structure

Off-site fabrication has the advantages of saving place for bar bending machine on site, lower cost and less waste produced

X = saving place for bar bending machine on site

Y= lower cost

X= less waste produced

(Logbook sample)

Use parallel structure

Off-site fabrication has the advantages of saving place for bar bending machine on site, lower cost and less waste produced

X = saving place for bar bending machine on site

Y= lower cost

X= less waste produced

Off-site fabrication has the advantages of saving place for bar bending machine on site, lowering costs and producing less waste.

(Logbook sample)

Use parallel structure

For example, the waste disposal arrangement of concrete demolition should be estimated and clarify the terms clearly in the tender too.

X = be estimated

Y = clarity

(Logbook sample)

Use parallel structure

For example, the waste disposal arrangement of concrete demolition should be estimated and clarify the terms clearly in the tender too.

X = be estimated


Y = clarity

For example, the waste disposal arrangement of concrete demolition should provide estimate and clarify the terms clearly in the tender too.

(Logbook sample)

Use parallel structure

“Originally, the site security was managed by our own project team, now an external contractor is used.”



“The site report was written outlining the safety issues and with a list of recommendations.”



Use parallel structure

“The routine maintenance includes the removal of rust and correcting pumps’ alignments.”



Use parallel structure

“This training is intended for an audience with some sales background but has little or no knowledge of book management. ”



Topic sentence

I learnt the principle and details at turn-table & rotary platform method for bridge building is to manufacture the whole bridge including aluminum cladding, concrete parapet and curtain wall structure on site and rotate the bridge to suitable place for installation by means of turntable supporting frame.

Exercise: add a topic sentence

(Logbook sample)

Topic sentence

I learnt the principle and details at turn-table & rotary platform method for bridge building is to manufacture the whole bridge including aluminum cladding, concrete parapet and curtain wall structure on site and rotate the bridge to suitable place for installation by means of turntable supporting frame.

I have learned that the principle of rotary platform involves pre-fabrication and rotating the structure into position for installation. In the case of a bridge, the mainframe together with aluminum claddings, concrete parapets and curtain walls are all manufactured on-site and then loaded onto a turntable, which then rotates the structure into the designated point for further works.

(Logbook sample)

Topic sentence

If the design is cooperated in advance during the design stage between the clients, leasing department and property management team, the possibility of defects occurrence would also be decreased. What is more, construction team could also provide professional suggestion and advice during the design stage due to the past experience and construction knowledge to prevent the defects occurrence

(Logbook sample)

Topic sentence

If the design is cooperated in advance during the design stage between the clients, leasing department and property management team, the possibility of defects occurrence would also be decreased. What is more, construction team could also provide professional suggestion and advice during the design stage due to the past experience and construction knowledge to prevent the defects occurrence

Good communication among stakeholders in the design stage can avoid need for design change. Furthermore, the construction team can offer their insights and site experience in design considerations of mechanical items.

(Logbook sample)

Topic sentence

When drafting F.R stainless steel door tender, I discovered there were total 8 numbers of non-fire-rated stainless door and only two of them were included in permanent ironmongery contract, which is means the rest of 6 is required to be included in variation order to existing permanent ironmongery s/c, the fire-rated s.s. door tender or an independent site tender.

Exercise: add a topic sentence

(Logbook sample)

Topic sentence

When drafting F.R stainless steel door tender, I discovered there were total 8 numbers of non-fire-rated stainless door and only two of them were included in permanent ironmongery contract, which means the rest of 6 is required to be included in variation order to existing permanent ironmongery s/c, the fire-rated s.s. door tender or an independent site tender.

Topic sentence = ?

I noticed that the permanent ironmongery contract has understated the number of stainless doors.

(Logbook sample)

How to say it

Question 1



Where is the pipe installed?

Question 3



What happened to the car?

Question 5



What happened to the truck?

Question 2



Where is the water tank?

Question 4



What happened to the scaffolding?

Question 6



What is the crane doing?

Cut out all unnecessary words

Cut out all unnecessary words

“ We refer to the **communication meeting** between Goodwell Property Management Ltd. and our building department with the presence of your staff....”

(writing sample)

Cut out all unnecessary words

I would appreciate your giving me the opportunity to discuss my qualifications in person.

(Writing sample)

I would very much appreciate a meeting to discuss with you my qualifications.

Cut out all unnecessary words

We are looking forward to hearing from you for details discussion with us and finalizing the work sequences / programme.

(writing sample)

We look forward to discussing with you the work schedule.

Cut out all unnecessary words

In technical writing you should strip every sentence to its cleanest structure.

Unnecessary words slow down reading, sound pretentious and impact your professional image.

You can usually cut words by :

- using active voice (discussed earlier)
- avoiding future tense (discussed earlier)
- cutting details that are already obvious
- avoiding cliché expressions (“a majority of” – use “more”; a sufficient amount of – use “enough”)

Cut out all unnecessary words

“am of the opinion that ...”

“as to whether...”

“reach a conclusion ...”

“conduct an analysis...”

“in order to...”

“it can be seen that...”

“is capable of...”

“make a proposal...”

Cut out all unnecessary words

“am of the opinion that ...”

“as to whether...”

“reach a conclusion ...”

“conduct an analysis...”

“in order to...”

“it can be seen that...”

“is capable of...”

“make a proposal...”

Summary

Report structure

Heading/Title

