


Scientific Writing in English  
—英语科研论文写作—



Lecture 15 Monday 09.11.2015  
(8.30-10.10pm/13.30-15.10pm)

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Scientific Writing in English  
—英语科研论文写作—

Volunteers for Note Taking  
(Chinese/English)

compiled version to:

赵竹轩 zhaozhuxuan@ucas.ac.cn  
&  
吕平平 pplv10@126.com

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Scientific Writing in English  
—英语科研论文写作—

What types of text structures used in academic writing have you learned about so far?

1. Problem->Solution
2. General->Specific
3. Old->New

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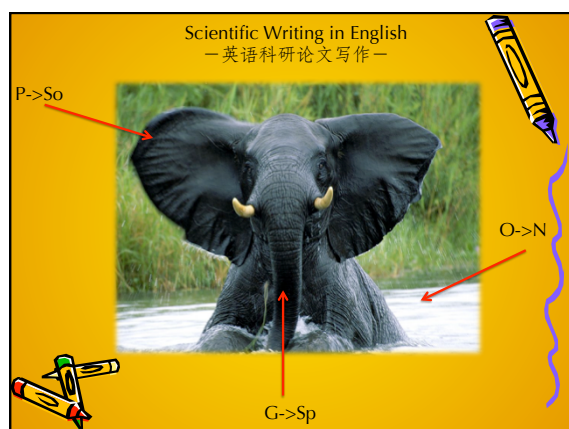
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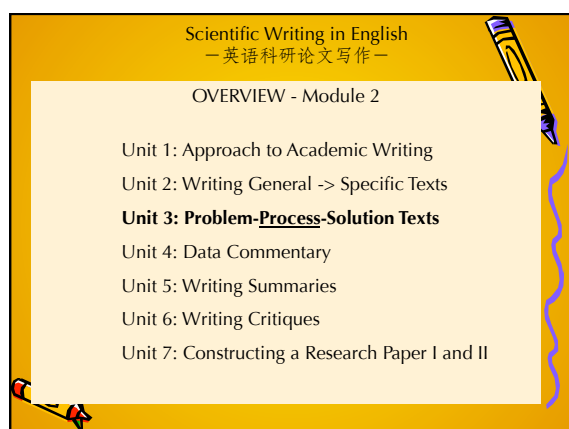
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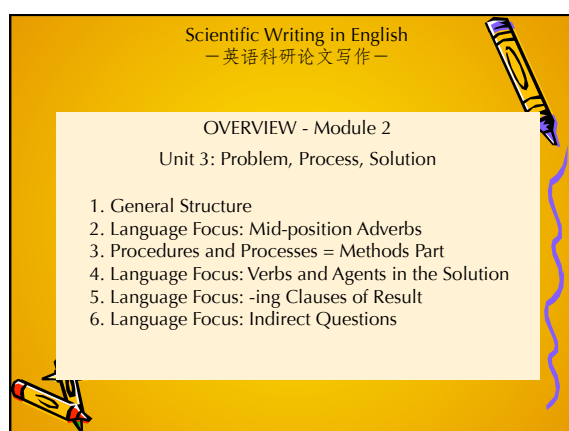
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Scientific Writing in English  
— 英语科研论文写作 —

Unit 3 - Problem, Process, Solution

\* Unit 2 described one type of structure in academic writing

**General-to-Specific:** useful for data commentaries, **introduction parts** of scientific articles  
(text: descriptive and expository)  
writer: informed and organized




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Scientific Writing in English  
— 英语科研论文写作 —

Unit 3 - Problem, Process, Solution

\* Unit 3 second structure underlying academic writing

**Problem-to-Solution:** useful for writing critiques, also present in introductions  
text: argumentative and evaluative  
writer: questioning and perceptive

**Process:** your Methods section




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Unit 3 - Problem, Process, Solution

\* discussion of **process descriptions**

a) describing the parts of a process as the steps required to provide a solution

b) problem described in terms of a process




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Scientific Writing in English  
— 英语科研论文写作 —

Unit 3 - Problem, Process, Solution

TASK 24A - *The Role of English in Research and Scholarship*

Pre-Class Homework

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TASK 24A  
Group Discussion  
(15 min)

<http://www.wenjuan.com/s/a6Jrme/>

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**TASK 24A**  
**Group Discussion (15 min)**

First, check out its General-Specific text structure. Does this text start with a definition, or a generalization?

How many sentences are used to provide background information?

What is the problem/question?

What is the solution as suggested by the author?

Have a look at the references used, especially the order of their publication. Do you have any criticisms?

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Scientific Writing in English  
— 英语科研论文写作 —

1<sup>st</sup> Paragraph

(1) There are many claims that a clear majority of the world's research papers are now published in English. (2) For example, in 1983 Eugene Garfield, President of the Institute for Scientific Information (ISI),<sup>1</sup> claimed that 80% of the world's scientific papers are written in English (Garfield 1983). (3) Comparable estimates have more recently been produced for engineering, medicine, and nonclinical psychology.

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2<sup>nd</sup> Paragraph

(4) It is not clear, however, whether such high percentages for English provide an accurate picture of languages chosen for publication by researchers around the world. (5) The major difficulty is bias in the databases from which these high percentages are typically derived. (6) The databases are those established by the major abstracting and indexing services, such as the ISI indexes and Medline, which are predominantly located in the United States. (7) As a result, these services have tended to preselect papers that (a) are written in English and (b) originate in the Northern Hemisphere. (8) For these two reasons, it is probable that research in languages other than English is somewhat underrepresented.<sup>2</sup> (9) Indeed, Najjar (1988) showed that no Arabic language science journal was consistently covered by the Science Citation Index in the mid-1980s.

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(10) We can hypothesize from the previous discussion that the role of English in research may be considerably inflated. 11. In fact, several early small-scale studies bear this out: Throgmartin (1980) produced English percentages in the 40% range for social sciences, and Velho and Krige (1984) showed a clear preference for publication in Portuguese among Brazilian agricultural researchers. (12) A complete bibliography on schistosomiasis, a tropical disease, by Warren and Newhill (1978) revealed an English language percentage of only 45%. (13) These studies would seem to indicate that a more accurate percentage for English would be around 50% rather than around 80%.

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(14) However, so far no major international study exists to corroborate such a conclusion. (15) Until such a study is undertaken - perhaps by UNESCO - the true global picture of language use in research publication will remain open to doubt and disagreement. (16) Until such time, nonnative speakers of English will remain uncertain about how effective their publications are in their own languages.

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Scientific Writing in English  
—英语科研论文写作—

TASK 24 - *The Role of English in Research and Scholarship*

Situation	Background information
Problem	?
Solution	?
Evaluation	Assessment of merits of proposed answer

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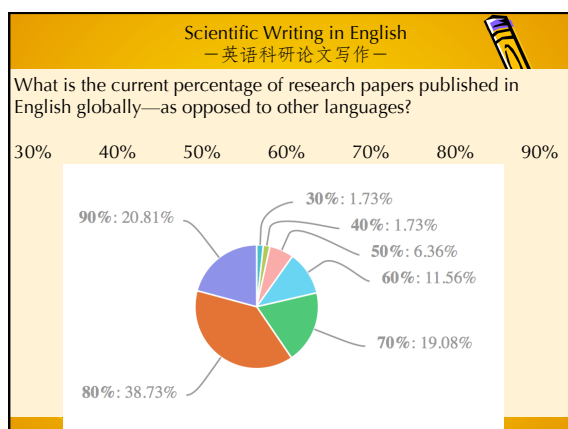
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**TASK 24A**  
**Group Discussion (15 min)**

First, check out its General-Specific text structure. Does this text start with a definition, or a generalization?

How many sentences are used to provide background information?

What is the problem/question?

What is the solution as suggested by the author?

Have a look at the references used, especially the order of their publication. Do you have any criticisms?

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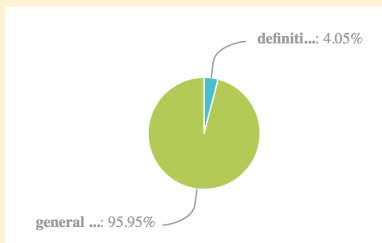
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**Scientific Writing in English**  
—英语科研论文写作—

Does this text start with a definition, or a generalization?




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**Scientific Writing in English**  
—英语科研论文写作—

How many sentences are used to provide background information?

Responses: 90% = 3 sentences (first paragraph)

(1) **There are many claims that a clear majority of the world's research papers are now published in English.** (2) For example, in 1983 Eugene Garfield, President of the Institute for Scientific Information (ISI),<sup>1</sup> claimed that 80% of the world's scientific papers are written in English (Garfield 1983). (3) Comparable estimates have more recently been produced for engineering, medicine, and nonclinical psychology.

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TASK 24A - *The Role of English in Research and Scholarship*

What is the problem/question?

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TASK 24A - *The Role of English in Research and Scholarship*

What is the problem/question?

-> there are good reasons for doubting accuracy of data

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TASK 24A - *The Role of English in Research and Scholarship*

What is the suggested solution?

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TASK 24A - *The Role of English in Research and Scholarship*

What is the suggested solution?

-> there are alternative data available that would allow for more accurate data

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TASK 24A - *The Role of English in Research and Scholarship*

How is the solution being evaluated?

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...(12) A complete bibliography on schistosomiasis, a tropical disease, by Warren and Newhill (1978) revealed an English language percentage of only 45%. (13) These studies would seem to indicate that a more accurate percentage for English would be around 50% rather than around 80%.

(14) However, so far no major international study exists to corroborate (confirm) such a conclusion. (15) Until such a study is undertaken—perhaps by UNESCO—the true global picture of language use in research publication will remain open to doubt and disagreement. (16)...

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What do you think about Nr. 16? Does it truly reflect the nature of the apparent problem?

(15) Until such a study is undertaken - perhaps by UNESCO - the true global picture of language use in research publication will remain open to doubt and disagreement. **(16) Until such time, nonnative speakers of English will remain uncertain about how effective their publications are in their own languages.**

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Scientific Writing in English  
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Percentage of publications in Chinese language?

答案

In my own field, the percentage of articles is 80% I think, only 20% are in Chinese.

45%.

No, 70% percentages

Very little.

May be 30%

I think it is more than 30%.

Yes. About 60%.

30 percent I think

May be 50%.

most of the publications are in English.

浏览次数: 200

High-Impact Journals mostly in English

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Scientific Writing in English  
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Percentage of publications in China in Chinese?

PubMed chinese[LA]  
Create RSS Create alert

Summary 20 per page Sort by Most Recent

Search results  
Items: 1 to 20 of 264887

PubMed china  
Create RSS Create alert Adv

Summary 20 per page Sort by Most Recent

Search results  
Items: 1 to 20 of 875620

$\geq 30\%$

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— 英语科研论文写作 —

TASK 24A - *The Role of English in Research and Scholarship*

What is the problem with the References?

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— 英语科研论文写作 —

TASK 24A - *The Role of English in Research and Scholarship*

What is the problem with the References?

(Garfield 1983)  
Najjar (1988)  
Velho and Krige (1984)  
Warren and Newhill (1978)

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Scientific Writing in English  
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TASK 24A - *The Role of English in Research and Scholarship*

Update  
Task 24B

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*The Role of English in Research and Scholarship: An Update\**

(1) The problem of accurately assessing the role of English in contemporary research was identified in the 1994 essay<sup>1</sup> as residing in the pro-Western and pro-Anglophone bias in the major databases. (2) The “solution” offered was then to look at small-scale empirical studies that suggested that the role of English had been exaggerated. (3) These studies apparently indicated that “a more accurate percentage for English would be around 50% rather than 80%.” (4) The earlier text, however, had failed to recognize that over the last thirty years many leading European (and Japanese) journals have switched from publishing in German, French, Dutch, Swedish, Japanese, etc., to new editorial policies that increasingly require submissions written in English. (5) As long ago as 1978, Lippert listed 33 German journals from the health and life sciences, which by 1977 had changed their titles and editorial policies from German to English. (6) More recently, comparable accounts have been produced for German chemistry (Wood 2001), Swedish medical research (Gunnarsson 1998), and French geology (Dressen 2002). (7) This new data, plus studies showing the increasing anglicization of doctoral dissertations in many countries, now suggests that the figure of 80% may be more accurate than previously believed. (8) However, there is also evidence that the dominance of English may be causing a counteraction, especially in situations where local concerns and interests encourage publication in local languages. (9) Rey-Rocha & Martin-Sempere (1999), for example, have shown this to be the case for earth scientists in Spain. (10) As ever, further research is necessary.\*

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TASK 24A - *The Role of English in Research and Scholarship*

Task 24B-Update  
Homework  
(code separately)

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Scientific Writing in English  
— 英语科研论文写作 —

OVERVIEW - Module 2  
Unit 3: Problem, Process, Solution

1. General Structure
- 2. Language Focus: Mid-position Adverbs**
3. Procedures and Processes = Methods Part
4. Language Focus: Verbs and Agents in the Solution
5. Language Focus: -ing Clauses of Result
6. Language Focus: Indirect Questions

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Scientific Writing in English  
— 英语科研论文写作 —

Language focus: Midposition adverbs (adverb...副词-fu<sub>4</sub>ci<sup>2</sup>)

\* as introduced in Unit 1, in academic writing, adverbs tend to occur within the verb

Examples

1) ...are **now** published... but: ...are published **today**... (after verb)

3) ...have more recently been produced... 3-part verb

8) ...is **somewhat** underrepresented...

-> find four more midposition adverbs in the text of TASK 1

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Scientific Writing in English  
— 英语科研论文写作 —

1<sup>st</sup> Paragraph

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2<sup>nd</sup> Paragraph

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Scientific Writing in English  
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(10) We can hypothesize from the previous discussion that the role of English in research may be considerably inflated. 11. In fact, several early small-scale studies bear this out: Throgmartin (1980) produced English percentages in the 40% range for social sciences, and Velho and Krige (1984) showed a clear preference for publication in Portuguese among Brazilian agricultural researchers. (12) A complete bibliography on schistosomiasis, a tropical disease, by Warren and Newhill (1978) revealed an English language percentage of only 45%. (13) These studies would seem to indicate that a more accurate percentage for English would be around 50% rather than around 80%.

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Scientific Writing in English  
— 英语科研论文写作 —

Language focus: Midposition adverbs (adverb...副词-fu<sub>4</sub>ci<sup>2</sup>)

\* as introduced in Unit 1, in academic writing, adverbs tend to occur within the verb

**TASK 25 – Adverbs in midposition**

Read through each sentence, and find suitable **single-word adverbs** to replace the phrase in *italics*. Write down your choice of adverbs into the box below.

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TASK 25



<http://www.wenjuan.com/s/aeyi2y/>

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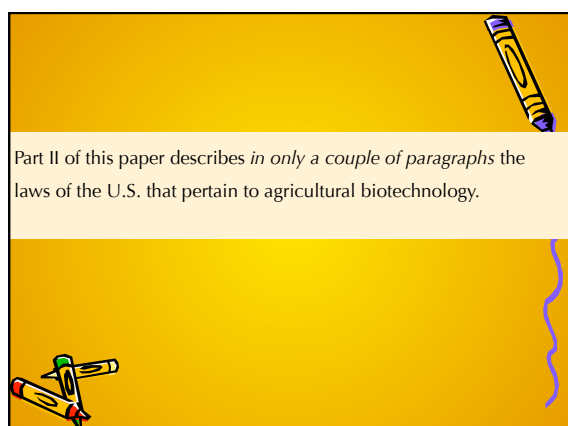
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Part II of this paper describes *in only a couple of paragraphs* the laws of the U.S. that pertain to agricultural biotechnology.

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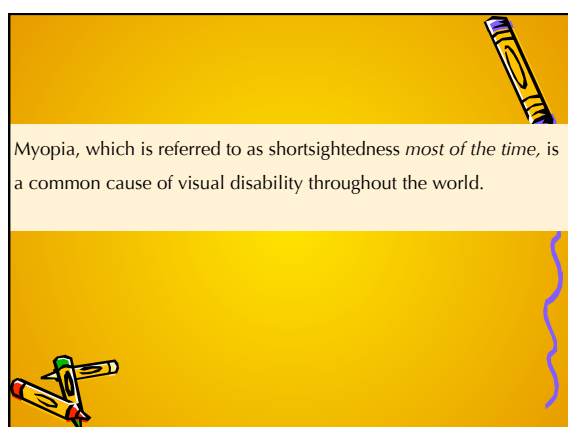
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Myopia, which is referred to as shortsightedness *most of the time*, is a common cause of visual disability throughout the world.

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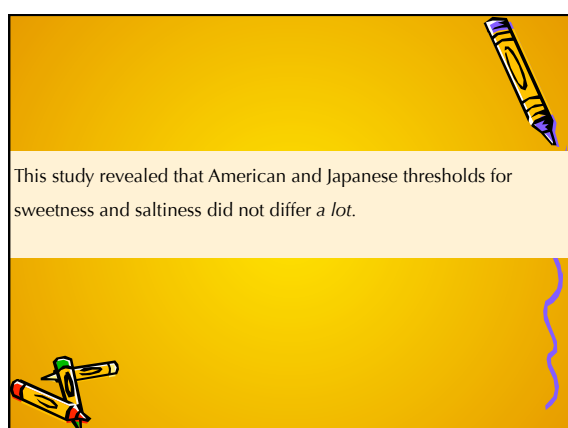
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This study revealed that American and Japanese thresholds for sweetness and saltiness did not differ *a lot*.

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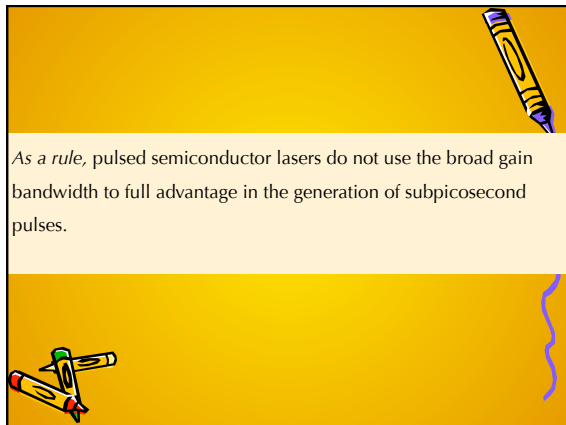
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As a *rule*, pulsed semiconductor lasers do not use the broad gain bandwidth to full advantage in the generation of subpicosecond pulses.

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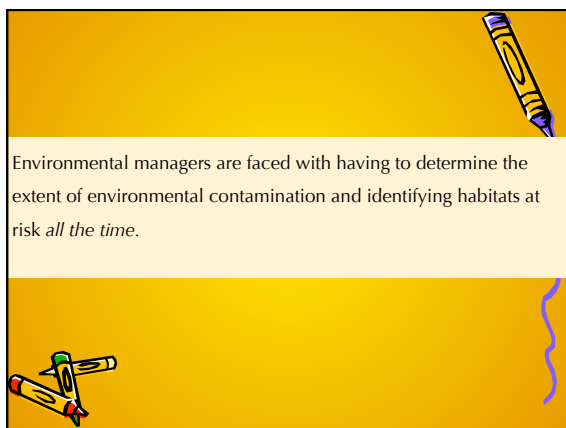
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Environmental managers are faced with having to determine the extent of environmental contamination and identifying habitats at risk *all the time*.

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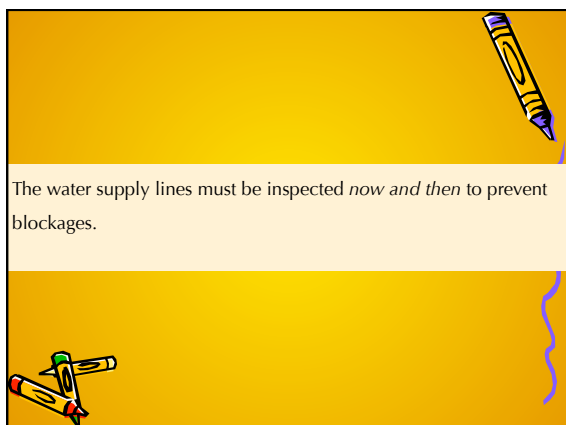
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The water supply lines must be inspected *now and then* to prevent blockages.

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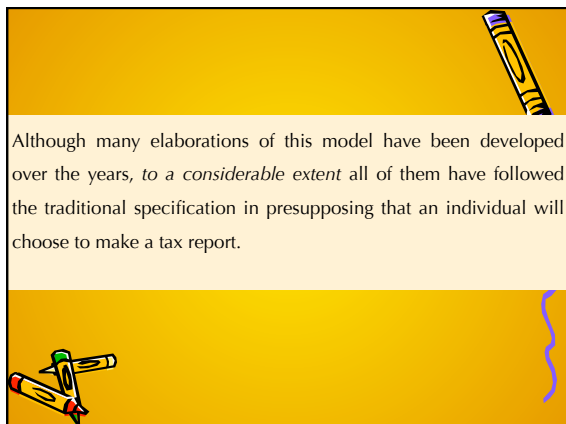
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Although many elaborations of this model have been developed over the years, *to a considerable extent* all of them have followed the traditional specification in presupposing that an individual will choose to make a tax report.

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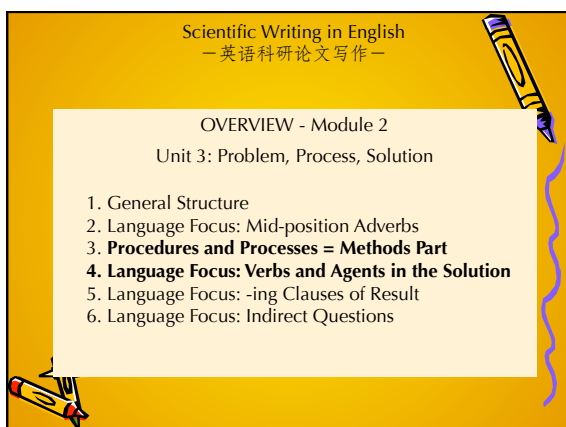
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Scientific Writing in English  
— 英语科研论文写作 —

OVERVIEW - Module 2  
Unit 3: Problem, Process, Solution

1. General Structure
2. Language Focus: Mid-position Adverbs
3. **Procedures and Processes = Methods Part**
4. **Language Focus: Verbs and Agents in the Solution**
5. Language Focus: -ing Clauses of Result
6. Language Focus: Indirect Questions

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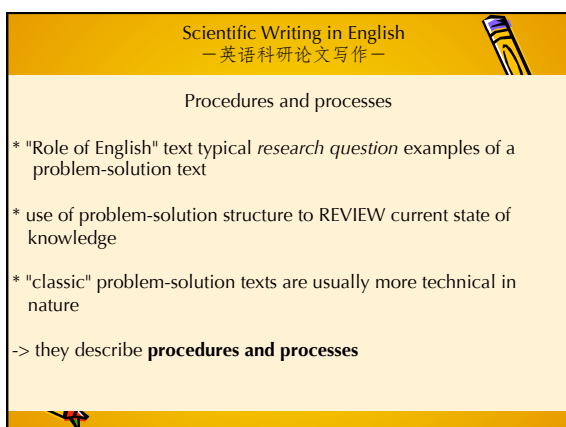
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Scientific Writing in English  
— 英语科研论文写作 —

Procedures and processes

- \* "Role of English" text typical *research question* examples of a problem-solution text
- \* use of problem-solution structure to REVIEW current state of knowledge
- \* "classic" problem-solution texts are usually more technical in nature

-> they describe **procedures and processes**

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Scientific Writing in English  
— 英语科研论文写作 —

Language Focus: Verbs and Agents in the Solution

(verb...动词)  
(agent...施事性名词)

- \* in most technical solutions, it is necessary to describe a process or **a method**
- \* when describing a method you used to carry out research -> **process description**
- \* use of verbs in **passive voice** common (passive voice...被动语态)

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Scientific Writing in English  
— 英语科研论文写作 —

Language Focus: Verbs and Agents in the Solution

**Passive Voice/被动语态**

- \* important role in **process descriptions**

Examples

Flu virus strains – three most common identified

Three strains – grown separately and harvested

Harvested virus – blended with a carrier fluid and dispensed into vials

-> set of notes -> how to turn into a set of instructions for use in the lab?

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Scientific Writing in English  
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Language Focus: Verbs and Agents in the Solution

**Set of instructions** for use in the lab:

1. Identify the three most common strains of flu virus.
2. Grow each of the strains separately and harvest.
3. Purify the harvested virus.
4. Blend the inactivated virus strains together

-> **use of Imperative forms**

(imperative verb form...祈使动词)

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Language Focus: Verbs and Agents in the Solution

-> how to describe **how something is done**, as a process?

1. First, the three most common strains of flu virus **are** identified.
2. These strains **are** then separately grown and harvested.
3. The harvested virus **is** purified and inactivated.
4. Finally, the inactive virus strains **are** blended together with a carrier fluid and dispensed into vials.

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Scientific Writing in English  
— 英语科研论文写作 —

Language Focus: Verbs and Agents in the Solution

-> **change of voice**

Identify!	-> are identified.
Grow! Harvest!	-> are separately grown and harvested.
Purify!	-> are purified and inactivated.
Blend! Disperse!	-> are blended and dispensed.

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Scientific Writing in English  
— 英语科研论文写作 —

Language Focus: Verbs and Agents in the Solution

\* each sentence refers to a specific **stage** in the process

1. Identification stage
2. Preparation stage
3. Dispensing stage

-> change from **action** -> **stage** description

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Scientific Writing in English  
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Language Focus: Verbs and Agents in the Solution

What would happen if active voice used?

The technician identifies the virus strains in the lab.  
The technician separately grows and harvests the virus.  
The technician purifies and inactivates the virus.  
The technician blends the inactive virus strains together with a carrier fluid and dispenses them into vials.

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Scientific Writing in English  
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Language Focus: Verbs and Agents in the Solution

What would happen if active voice used?

- > focus on the stages of the process lost
- > emphasis shifted to the agent (technician)
- > process itself into background

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Language Focus: Verbs and Agents in the Solution

Possible that different agents perform the different steps:

Technician A identifies the virus strains in the lab.  
Technician B separately grows and harvests the virus.  
Technician C purifies and inactivates the virus.  
Technician D blends the inactive virus strains together with a carrier fluid and dispenses them into vials.

-> **Duty roster**, not a description of a process

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Scientific Writing in English  
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Language Focus: Verbs and Agents in the Solution

-> to describe both process and agents:

First, the three most common strains of flu virus are identified by technician A. These strains are then separately grown and harvested by technician B. The harvested virus is purified and inactivated by technician C. Finally, the inactive virus strains are blended together with a carrier fluid and dispensed into vials by technician D.

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Scientific Writing in English  
— 英语科研论文写作 —

Language Focus: Verbs and Agents in the Solution

-> to describe both process and agents:

First, the three most common strains of flu virus are identified by technician A. These strains are then separately grown and harvested by technician B. The harvested virus is purified and inactivated by technician C. Finally, the inactive virus strains are blended together with a carrier fluid and dispensed into vials by technician D.

-> very uncommon, especially in manuscripts (agent not important)

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Language Focus: Verbs and Agents in the Solution

-> human agent used when describing the history of the field

Example

The theory of transformational grammar was first developed by Noam Chomsky.

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Language Focus: Verbs and Agents in the Solution

-> most commonly used way used in the methods part of a manuscript:

First, the three most common strains of flu virus were identified. Strains were then separately grown and harvested. Harvested virus was purified and inactivated. Finally, the inactive virus strains were blended together with a carrier fluid and dispensed into vials.

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Language Focus: Verbs and Agents in the Solution

-> NO agent

-> it is clear that it was you and your co-authors who did the work

-> use of passive voice AND past tense

-> definite article (the) often omitted in methods section

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\* use of by + process or by + non-human agent

Examples

The chances of finding oil are often estimated *by seismic survey*.

This enzyme is used *by cancer cells* to replicate.

\* NOTE different uses of:      by  
   with/using

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Example

The rate at which heat will be lost **by conduction** from the body will be determined **by the magnitude of the temperature gradient** – the steeper the gradient, the greater the heat loss – and the rapidity with which the cooler air in contact with the skin is replaced **by colder air**.

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\* by + process statements typical for published journal articles, especially in the **methods section** of scientific articles

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Comment on **By** versus **With/Using**

\* Where the data collected **with or by** a machine or method?

\* Tip: Where the data collected **by** you **with/using** the help of a machine?

or

Where the data collected **by** the device itself?

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Comment on **By** versus **With/Using**

Examples:

The cells were counted (by you) **with/using** (the help of) a microscope.

The results for the protein structure were generated **by** the software (which itself calculated the matching probabilities).

The patient was treated by the doctor **with** a drug.

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Language Focus: Verbs and Agents in the Solution

TASK 27

How much information required?

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-> sometimes by+process word not sufficient information

Example:

Teaching can be improved by in-service training.

To be extended for greater **precision:**

Teaching can be improved by requesting teachers to attend a range of short courses throughout their entire careers.

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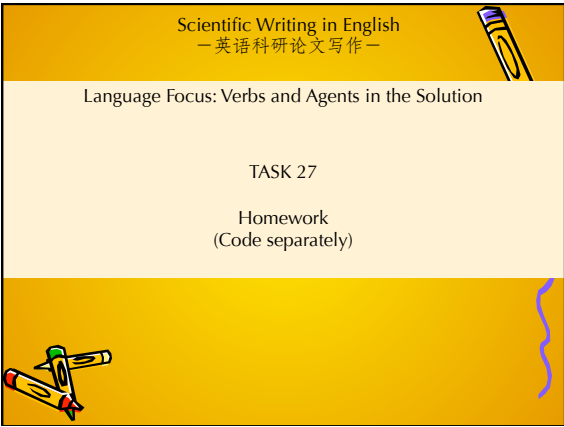


Scientific Writing in English  
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Language Focus: Verbs and Agents in the Solution

TASK 27

Homework  
(Code separately)



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