
College Core English

• Reading and Writing •

大学核心英语

读写教程

第五册

杨惠中 张彦斌 主编

Gfeofrey Thompson 编写

吴信强 李爱华



高等教育出版社

牛津大学出版社

College Core English

• Reading and Writing •

大学核心英语

读 写 教 程

第五册

杨惠中 张彦斌 主编

Geoffrey Thompson 编写
吴信强 李爱华



高等教育出版社

牛津大学出版社

内 容 提 要

《大学核心英语》系根据1985年国家教育委员会颁发的《大学英语教学大纲(理工科适用)》编写的系列教材。《读写教程》(第五册)按照书面语言特点培养学生的阅读技能,提高阅读能力,和帮助学生掌握英语写作的技能。本书共有十五单元,每一单元由四部分组成:TEXT A, TEXT B, WRITING 和 TEXT C。

本书阅读材料均选自原文,题材广泛,语言规范,知识性强,练习丰富。书后并附有词汇表,注释及 TEXT C 的练习参考答案。适用于《大纲》规定的第五级英语教学,也可供同等程度的英语学习者使用。

本书由高等教育出版社和牛津大学出版社合作出版

大学核心英语

读 写 教 程

第 五 册

杨惠中 张彦斌 主编

Geoffrey Thompson 编写

吴信强 李爱华

高等教育出版社出版

新华书店上海发行所发行

上海市印刷三厂印装

开本 850×1168 1/32 印张 25 字数 599,000

1989年6月第1版 1989年6月第1次印刷

印数 0001—

ISBN 7-04-002199-4/H·268

定价 5.85 元

Acknowledgement

The Publishers and Shanghai Jiao Tong University would like to thank the Pei Hua Foundation, Hong Kong, for financial assistance in the Writing of these materials.

INTRODUCTION

Aims

The general aim of this book, in accordance with the objectives set out in the *National College English Syllabus*, is to develop the students' ability in reading and, to a lesser extent, writing to the point where they are able to acquire information in their fields of specialisation from written texts in English, and where they have a solid foundation for further development of their competence in English.

The materials in Books 5 and 6 build on the work done in Books 1—4. In particular, they are designed:

a) to give the students a wide range of practice in the communicative skills and strategies introduced in the earlier books;

b) to provide the students with an opportunity to apply those skills and strategies to texts which increasingly challenge and extend the students' ability to cope with complex information presented in English;

c) to expose the students to vocabulary learnt in the earlier books in new contexts, in order to reinforce the students' understanding of the meaning and scope of the vocabulary;

d) to give the students an introduction to the new vocabulary prescribed in the *Syllabus* for Bands 5 and 6, as far as possible in the kind of context in which the students are likely to meet it in their own future studies.

Contents

1. The texts in this book deal primarily with scientific and technical topics. They are taken from sources — journals, newspapers, etc. — which are intended for non-specialist readers: members of the general public with the level of interest in science and technology which may be expected from any educated person today. Thus, any more detailed knowledge of the subject which is required is normally given in the texts themselves.

The main reasons for focussing on texts with this type of content are as follows:

a) The texts prepare the students for the kind of reading which, as the *Syllabus* recognises, they will need to do in their future careers.

b) While showing many of the typical features of scientific prose, the texts also exemplify more generally the features of all formal academic writing in English whether relating to science or the arts.

c) The texts make not only linguistic demands on the students, but also intellectual demands. The purpose of this is to accustom the students to approaching English as a medium for ideas, not just as a surface pattern of known and unknown

words.

d) At this level, the vocabulary prescribed in the *Syllabus* is predominantly drawn from texts of various fields of science and technology. In order to present the vocabulary in convincing and relevant contexts, it is necessary to use texts relating to those fields.

Our crucial criterion in selecting a particular text from amongst several within a certain field was that of intrinsic interest. Hopefully, the users of this book — students and teachers — will find the texts equally interesting.

Although alterations were made wherever necessary, the texts are basically authentic in an important way: they were written for native English readers who are on an intellectual par with the students for whom this book is intended.

2. The exercises in this book fall into four main categories: those dealing with vocabulary, those dealing with the text as a linguistic object, those dealing with the text as a vehicle of information, and those dealing with the use of English in general and translation skills.

a) The exercises deal with virtually all the new prescribed vocabulary as it is introduced; and many of the items are recycled in the exercises, as well as the texts, of later units. Through the *Vocabulary development* exercises, the students are encouraged to see the vocabulary items not only in isolation but in the large context of their relationships to other words. In addition, there are regular *Vocabulary use* exercises giving practice in guessing words from their form and context; and *Dic-*

tionary using exercises, training students in the use of both bilingual and monolingual dictionaries. There are also exercises on *Problem points* — areas of particular difficulty for Chinese learners of English.

b) Any text has a structural organisation above the level of the individual sentences. The students are given practice in identifying this organisation and in seeing how it clarifies and is determined by the information or message that the writer wishes to convey. Exercises such as *Text structure*, *Cohesion* and some of the *Comprehension* exercises are designed to focus on the various methods of establishing cohesion within a text; on how paragraphs are structured and how they themselves contribute to the structure of a whole text; on how links between the sections of a text are made clear; and so on.

c) The students are given practice in extracting information in the most efficient way, and in taking into account the point of view from which the information is given. The importance in comprehension of factors such as recognition of rhetorical functions, identification of implied information and use of the reader's own knowledge is also emphasised.

d) There are also exercises attached to Reading Texts A and B which render students general and integrated practice in the use of English, comprising structure transformation, cloze-type blank filling, and translation skills, both English-Chinese and Chinese-English.

Although in accordance with the *Syllabus*, less emphasis is laid on the writing component than on reading skills, writing

skills is still, as in Books 3—4, treated as an independent section of each unit in this book. Exercises deal with all levels of text organisation, from the effect of lexical choice on sentence patterns to the structuring of short essays. There is also a special series of exercises dealing with letter writing.

In developing the exercises, it has been assumed, as stated in the *Syllabus*, that the students are already familiar with the majority of the main grammatical and discourse features of English, and have been introduced to the main techniques and strategies for reading. The chief function of Books 5—6 is to reinforce and extend the students' vocabulary and their ability to deal with English texts, rather than to introduce new elements of grammar or discourse, or new strategies.

Organisation

The Student's Book is divided into 15 units, each of which represents slightly more than a week's work. Every 5th unit includes a revision of points taught and practised in the previous units.

Every unit falls into four sections, i.e. TEXT A, TEXT B, WRITING and TEXT C. Each TEXT is centred on a text or group of texts; but in some units, one long text has been split into three parts, so that it covers the whole unit.

The layout of each TEXT section is: Pre-reading, Text, Exercises. For easy reference Pre-reading and Exercises are preceded by code numbers. The unit format can be exem-

plified by UNIT 1 as follows:

UNIT 1

TEXT A

A1 Pre-reading

WHAT SCIENCE IS FOR

A2 Vocabulary use

A3 Comprehension

A4 Vocabulary development

A5 Word groups

A6 Problem point

A7 Use of English

TEXT B

B1 Pre-reading

THE PUBLIC VIEW OF SCIENCE

B2 Vocabulary use

B3 Comprehension

B3—1

B3—2

B4 Vocabulary development

B5 Translation practice

WRITING

Letter-writing

TEXT C

C1 Pre-reading

WHY SCIENTISTS SHOULD BE ON TOP

C2 Vocabulary use

C3 Comprehension

C4 Cohesion

C5 Vocabulary development

C6 Dictionary using

As will be seen, the Pre-reading is generally quite extensive, and may contain up to four or five different kinds of short exercises.

In general, TEXT A section focuses on vocabulary, while TEXT B section focuses more on the organisation of the text as a whole. TEXT C section usually covers more or less the same areas of study as the first two, and is designed in such a way that it can be worked through by the students in their own time, if there is not enough time in class. Writing exercises are normally done after TEXT A and TEXT B have been taught.

At the end of the 15 units, two appendixes are supplied. Appendix 1 includes notes on all the texts in this book while Appendix 2 gives the answers to the exercises in TEXT C section so that the students may work on their own.

Since many of the exercises (such as guessing word mean-

ing from context) depend on the students' not using a dictionary, the point in each reading section where dictionaries may be used is indicated by the symbol:

*** Dictionary ***

College Core English (Book 5) is the result of effective collaboration between Shanghai Jiao Tong University and Oxford University Press. Involved in the actual writing tasks are Geoff Thompson, Wu Xinqiang and Li Aihua under the general editorship of Yang Huizhong and Zhang Yanbin. Meanwhile, thanks are owed to many who have helped to make the publication of this book possible.

We particularly wish to express our gratitude to Professor Lu Ci (Qing Hua University), Professor Han Qishun (Chong Qing University), Professor Cheng Enhong (Central China University of Engineering and Technology), Professor Zhong Xiaoman (Zhe Jiang University) and Professor Li Shumin (Northwestern Polytechnical University) who formed the committee to scrutinise this book on behalf of the State Education Commission of China, and also to Pamela Brelsforth from Great Britain for proof-reading the pre-printing version.

June, 1988

CONTENTS

INTRODUCTION

UNIT 1 TEXT A What Science Is for

(1) TEXT B The Public's View of Science

WRITING Letter-writing

TEXT C Why Scientists Should Be on Top

UNIT 2 TEXT A Welcome to the Worldwide Old Folk's Home

(42) TEXT B Problems Either Way

WRITING Letter-writing

TEXT C Predictions or Guesses ?

UNIT 3 TEXT A Inside the Weather Bomb

(80) TEXT B As Prediction Improves, the Monsoon Is Less Predictable

WRITING Letter-writing

Prediction

TEXT C (A) Scientists Welcome First Prediction of Earthquake
(B) Not Really Earthshaking News

UNIT 4 TEXT A Advertisements I

(119) TEXT B Advertisements II

WRITING Letter-writing

TEXT C Advertisements III

UNIT 5 TEXT A Bright Outlook on Antarctic Science

(159) TEXT B Biological Implications of Gondwana

WRITING Complex sentences

Revision

TEXT C Antarctic Forecasts

UNIT 6 TEXT A The Pleasures of Problem Solving

(202) TEXT B School Science Meets the Real World

WRITING Checklist

Concluding summary

TEXT C Signs of Change in the Science Class

UNIT 7 TEXT A The Complications of Using Software

(243) TEXT B Growing up with Computers

WRITING Checklist

Writer's Attitude

Summary

TEXT C Putting Words into Your Mouth

UNIT 8 TEXT A The Problem of Noise — the Background

(287) TEXT B Noise: Industry Turns a Deaf Ear

WRITING Checklist

TEXT C The Sound of Silence

UNIT 9 TEXT A Superconductors Come in From the Cold

(327) TEXT B The Rush to Superconducting

WRITING Paraphrasing

Instructions

TEXT C Do-It-Yourself Superconductors

UNIT 10 TEXT A (A) Musical Robots

(371) (B) Hamburgers with Chips ... and Robot

(C) Killer Robots

TEXT B Vision Leads Robots from the Factory

WRITING Checklist: revision

TEXT C Matching Image and Model

UNIT 11 TEXT A (A) The Ozone Layer in Danger

(419) (B) Structured Ozone Holes

TEXT B The Great Ozone Controversy

WRITING Nominalisation

Developing an argument

TEXT C (A) Fungus Attacks Ozone Layer

(B) The Widening Hole Over Antarctica

(C) Hoyle's Haze

UNIT 12 TEXT A In Search of Solar Systems

(460) TEXT B Wobbling Stars

WRITING Nominalisation

Cause and effect

TEXT C Debatable Debris

UNIT 13 TEXT A Oil From the Centre of the Earth

(500) TEXT B Who Needs Biology ?

WRITING Nominalisation

Evaluating evidence

Presenting an argument

TEXT C Drilling for Non-Biological Oil

UNIT 14 TEXT A The Missing Links of Evolution

(546) TEXT B Evolution by Jerks

WRITING Explanation

Developing an argument

TEXT C Junk Genes

UNIT 15 TEXT A The Scientific Imagination

(588) TEXT B Chance or Sound Science ?

WRITING Nominalisation: revision

Letter-writing: revision

TEXT C An Accidental Particle

APPENDIX 1 Notes on the Texts (628)

APPENDIX 2 Students' Answer key (685)

GLOSSARY (730)

UNIT 1

TEXT A

A1 Pre-reading

1. The texts in this Unit deal with the position of science and scientists in society.

Before beginning to work through the Unit, fill in the following questionnaire by putting a tick (✓) under the answer that most closely expresses your opinion about each question.

- A. A lot in general
- B. A lot in a few areas
- C. A little
- D. Not very much at all

	A	B	C	D
a. How much do you know about the latest developments in science and technology as a whole ?				

b. How much do you read about other areas of science and technology outside your own subject ?				
c. How much do you think ordinary people know about the latest developments ?				
d. How interested do you think ordinary people are in such matters ?				
e. How ready are scientists in general to explain their work to ordinary people ?				
f. How much do you think your training in your subject can help you with your ordinary life (apart from helping you to get a job !)				

Now go through the questionnaire again and put a cross (×) under the answers that express what you think ought to be the case in an ideal world. To which of the questions have you given different answers ? Why?

2. In the first text, you will come across the following words which may be unfamiliar but which are formed from words that you already know.

First, write down the familiar word from which the word