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普通高等教育“十二五”重点规划教材

Nucleus  
新核心

# 综合学术英语教程

An Integrated Academic English Course

主编 蔡基刚



上海交通大学出版社  
SHANGHAI JIAO TONG UNIVERSITY PRESS

新核心学术英语 (EAP) 系列教材

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English Course  
4  
An Integrated Academic



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## 内容提要

《综合学术英语教程 4》(An Integrated Academic English Course IV)是“新核心学术英语(EAP)系列教材”主干教材《综合学术英语教程》中的第四册。本册教材把听、说、读、写、译有机地融合在一起,发展学生的综合学术英语能力。

《综合学术英语教程》系列教材是我国高校英语教材从几十年一贯的“打基础性”的通用英语教材向为满足学生专业学习需求的学术英语教材转型的尝试,开启了高等院校英语教材本质的回归之路,是与世界高校的非英语专业学生的英语教材的第一次接轨,以期更好地为学生专业学习需求和专业人才培养总目标服务。

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# 总序

2007年,教育部颁布文件,提出高等院校英语教学改革要探索有效的教学方法和模式,切实提高高等院校学生的专业英语水平和直接使用英语从事科研的能力。2013年2月,上海市教委颁布《上海市大学英语教学参考框架(试行)》。这份我国第一个以学术英语为导向的地方大学英语教学大纲明确规定“大学英语教学的目标是培养学生听、说、读、写等学术英语交流技能,使他们能用英语进行自己的专业学习和从事今后的工作,在自己专业领域具有较强的国际交往能力”。为推动大学英语改革,落实这一新的高校大学英语教学目标,我们组织编写了新核心学术英语(EAP)系列教材。

学术英语属于专门用途英语,“是一种在高校层面为高校学生用英语进行专业学习提供语言支撑的英语教学”,旨在“帮助学生从通用英语顺利过渡到用英语进行专业学习”。学术英语可分通用学术用途英语(EGAP)和专门学术用途英语(ESAP)两种。通用学术英语训练学生在各学科中通用的听、说、读、写等学术英语交流技能,例如听讲座、做笔记、报告展示、撰写文献综述和论文、参加学术讨论等能力,尤其是学术活动中所需要的批判性思维能力。专门学术英语侧重特定学科(如医学、法律、工程等学科)的词汇语法、语篇体裁以及工作场所所需要的英语交流能力。可见,通用学术英语和目前高等院校英语课程内容具有本质区别,专门学术英语和过去的科技英语或目前高校开设的法律英语、计算机英语、生物英语等专业英语也是有根本区别的。专门学术英语强调的是这些学科领域内的口头和书面交流的英语技能;专业英语则把重心放在这些学科的词汇和内容的教学上。前者是大学英语教师开设的,后者往往是学科的专业教师开设的。

新核心学术英语系列教材包括通用学术英语和专门学术英语两个系列。通用学术英语系列包括《综合学术英语教程》系列教材、《学术英语·听说教程》系列教材等。通用学术英语系列教材和目前高等院校综合英语教材有三个不同。不同之处有:①两者在目的上不同。前者是为学生的专业需求、专业学习服务的;后者纯粹为打好英语基础而打基础。②课文材料有所不同。前者的课文信息性较强,选用具有一定抽象性的一般

人文科普文章；后者的课文主要是以趣味性较强的小说、故事和散文为主。③教学方法不同。前者是以项目为驱动，以学习者为中心的教学，主要训练学生查找信息，归纳和表达，培养学生的批判性思维能力，以及团队合作和交际沟通能力；后者则以教师为中心，注重词汇、语法和句子的分析。

Cummins (1979) 认为，一个人的语言水平由“人际交流基本技能”(Basic Interpersonal Communicative Skills, BICS)与“认知学术语言能力”(Cognitive/Academic Language Proficiency, CALP)组成。前者是指日常生活交际中使用的语言，交际任务的认知要求比较低，语言和内容都比较简单；后者则是指在抽象程度较高的学术话题交流中使用的语言，不仅需要有很强的听、说、读、写能力，而且需要有很强的分类、综合、评价和推断的能力，对认知程度要求比较高。当学习者具备了一定的语言水平和知识面，如果还是在低层次的语言技能上徘徊训练，还是选择日常生活主题，其语言能力不可能有进一步提高。也就是说，适度挑战性的学术内容 (appropriately challenging academic content) 和一定深度的认知互动 (sufficient depth of cognitive interaction) 是提高英语水平的关键 (Kong & Hoare, 2011)。

根据我们了解，世界各国、各地区高校的英语教学无不是 Academic English。例如，凡是到英美国家和香港地区读大学的外国留学生都必须先修读学术英语，以尽快适应主流专业课程。即使是日本高校这样的非全英语教学环境，他们为非英语专业学生开设的英语课程也清一色是学术英语听说、学术英语读写、学术英语陈述等课程，因为这些课程不仅培养学生专业学习所需要的听、说、读、写能力，而且帮助他们掌握科学的研究方法，组织和评价不同来源的信息，并能用口语和书面方式进行表达，很好地培养了学生的批判性思维能力和创新性思维能力。这些能力已成为当今高校学生不可或缺的最基本的学术素养。

本系列教材是我国高校英语教材从几十年一贯的“打基础性”的通用英语教材向为满足学生专业学习需求的学术英语教材转型的尝试，开启了高等院校英语教材本质的回归之路，是与世界高校非英语专业学生的英语教材的第一次接轨，以期更好地为学生专业学习需求和专业人才培养总目标服务。尽管国际上已有许多学术英语教材出版，但适应中国学生的本土化高校学术英语系列教材仍是空白。本系列教材的编写是首创，经验不足，错误难免，但其破冰之旅必将对我国高等院校英语教材的转型和发展产生历史性的影响。

主编 蔡基刚

2013年4月

# 前言

《综合学术英语教程》(An Integrated Academic English Course)系列教材是“新核心学术英语(EAP)系列教材”中的主干教材。这套主干教材包括四册,供非英语专业本科四个学期的通用学术英语教学使用,旨在培养学生的听、说、读、写、译等方面的学术英语的基本技能。教材的编写特色如下。

## 一、基于比较全面的编写调查

本套教材的编写基于以下几个调查。①对北美高校、日本高校、我国香港地区高校和宁波诺丁汉大学的学术英语课程内容进行了文献调查或实地考察;②对我国高校尤其是上海高校的专业院系的教师和学生进行了较大规模的英语学习需求分析;③对雅思学术英语考试、托福考试和我国大学英语四、六级考试等英语考试进行了分析;④对国外学术英语教材进行分析、研究和借鉴。在此基础上,我们形成本套教材所要教授的学术英语的内容和技能。

## 二、突出学术英语技能训练

本套教材具有很强的针对性,着重培养学生专业学习中所需要的英语能力,如:①听懂英语讲座和讲课的听力技能;②搜索、汲取、评价和组织信息的阅读技能;③引用原文、转写原文段落和句子等语言技能;④口头陈述学术观点和演示学术研究成果的技能;⑤撰写学术说明文、文献综述和小论文等写作技能;⑥参加和组织学术讨论,进行有效问答的口语技能;⑦以独立或合作形式开展学术研究的技能等。

## 三、强调课文选材的信息性

与传统的高校英语教材突出趣味性原则和选材以日常话题和“久经考验、百读不厌”的范文为主不同,本套教材充分考虑学生在专业学习和日常工作中英语阅读的需求,以及当代高校学生的知识结构和思维特点,强调课文的信息性和适度的抽象性。本套教材通过选取自然科学和人文社会等针对一般读者的文章,培养学生快速阅读和快速汲取信息的能力,以应对真实世界的英语阅读。同时,通过一些深层次的科技人文话题的介绍,培养学生的科学精神、科学方法和批判性思维的学术素养。

## 四、培养批判性思维能力

批判性思维能力是21世纪高等院校学生进行卓有成效的专业学习和研究时必备的

学术素养,也是从事任何工作必备的职业素养和公民素养。本套教材通过精心设计的练习,着重培养学生的批判性思维能力。例如,通过向学生提供不同来源的同一主题的课文材料,鼓励学生质疑和比较不同作者的观点,提出独立的、综合的、评判性的见解,以培养学生分析问题,思考和推理,从而解决问题的能力等。在方法上,本套教材采用以项目为驱动的教学法,此教学法可以有效地培养学生的批判性思维能力。

### 五、注重较大量输入和输出

国外的学术英语读写教材以技能介绍为主,阅读量不大。考虑到我国高校学生的英语语言基础还相对薄弱,本套教材围绕技能学习提供大量的文章(如每单元提供4篇相关主题的文章,和2~3篇讲座性质的听力),以保证语言的大量输入和词汇的附带习得。词汇训练除了大学英语四、六级词汇,还包括国际上通用的3 000词族和28个学科中通用的、词频最高的570个学术英语词族。课文中的这些词族作为目标词被重点学习和操练。写作训练是以话题或项目为驱动,要求在阅读相关文章的基础上进行有引用文献的学术写作,不规定词数。书面输出强调正式文体。在写作基础上要求进行陈述演示性质的宣读。

### 六、各册采用不同的编写体例

与传统的高校综合英语教材不同,本套教材根据不同的学术英语能力和各个阶段的教学重点,考虑到学生和教师的审美疲劳感,四个分册的编写采用不同的体例,如第一、二册围绕不同话题组织各个单元的内容,第三册以微技能为主线组织各个单元,第四册以输入、输出过程为主线安排各单元。除了教材的主干结构不同,每册的练习更是有很大不同,练习新颖多样,几乎所有的练习都是模拟真实学术活动,而非模拟考试中的题目。例如,做读书笔记的归纳练习,写文章所需要的综合信息的练习和转写原句的练习等,其中不少练习具有创新性,给老师、学生带来耳目一新的感觉。

### 七、参与培训学术英语教师

学术英语如何教?对大多数一直从事通用英语教学的教师来说,这是一个崭新的课题。调查表明,我国的高校英语教材比起《教学大纲》或《课程要求》更能起到传播一种新的教学理念、教学模式和教学方法的作用。考虑到我国高校英语教材的这一特殊作用,同时考虑到不少教师对学术英语的不了解甚至恐惧心理,本套教材尝试通过具体的编写体例和练习模式,用比较直观的方法对教师进行培训。

本套教材是中国学术英语教材的第一次尝试,其中定会存在不当和疏漏之处,敬请读者批评指正。

蔡基刚

2013年5月

# 编写说明

本教材为《综合学术英语教程》第四册,供非英语专业本科生使用,也可供研究生使用。大量调查表明,当今大学生对用英语阅读专业文献并获取专业信息有强烈的需求,还有相当一部分学生有用英语写文献综述、摘要和小论文的需求。本教材主要针对这类读者而编写,旨在帮助他们提高相关技巧与能力。

本册包括六个单元,主要按两条主线编写。① 第一条主线按照学术论文写作的步骤设计内容,如第一单元到第六单元的写作主题分别为:如何选择论文的主题;如何收集写论文所需要的资料;如何写综述文献和引言部分;如何写方法和结果部分;如何写讨论、结论和摘要部分;如何写论文的口头陈述稿。② 每个单元至少包括一篇1,500词到2,400词的正式学术论文,主题包括科研论文写作、婴儿哺乳习惯、校园作弊、转基因食品的危害、医学领域造假和饥饿认知影响,涉及语言学、医学、教育学、心理学和生物学等学科的一般内容,专业内容与语言难度都不高。论文不仅配有大量语言和理解练习题,还为该单元的学术写作提供结构模式和写作方法。

本教材目的有两个:① 帮助学生熟悉正式论文的结构,提高他们阅读英语论文及从中汲取信息的能力;② 通过对学术论文写作的分析和练习,培养学生的英语论文写作能力。这种编写方法在中国大陆尚属首次。传统的学术英语写作教材只在写作范围内展开,阅读教材主要针对阅读,写作成分居于其次。本教材在把学术英语写作和学术英语论文阅读的有机地结合方面做了较好的尝试。

本册共由三个部分组成。

## 1. Focusing on Reading

这一部分首先提供一篇正式学术论文阅读,内容有趣,不失学术论文原味。练习题有课文信息匹配题、理解简答题、词汇词义配对题、找同义词、句子改写、段落摘要写作、全文摘要写作和听讲座写摘要等。目的在于:① 培养学生论文阅读能力;② 扩大学生词汇



量;③提高学生语言水平。

## 2. Research Paper Writing

六个单元的此部分有前后顺序的内在联系,从第一单元的课题选择到后几单元的文献综述、引言写作、研究方法、结果分析、讨论与结论,到最后一个单元的口头演示和海报演示,一步一步传授论文写作和国际学术交流的方法。每一部分都配备足够的练习,以保证每一部分写作的成功。

## 3. Academic Survival Skills

这一部分实际上是论文写作规范、技巧的练习,例如,如何防止剽窃、如何引用原文、如何综述不同来源的材料、如何使用正式文体的词汇和结构、如何运用恰当的模糊限制语、如何写参考文献等。

本教材供一个学期72课时教学使用。具体教学方法可根据不同需要有所侧重。对不特别需要论文写作的学生,教学主要目的在于培养学生阅读论文和从中汲取信息的能力,可把重点放在第一部分的论文阅读及其阅读练习上。课堂上可以开展课题或项目为依托的教学法,如根据该单元的论文主题,要求学生搜索相关的材料,写成文献综述或小报告,在课堂上演示汇报,并交流。

学生如果对学习英语论文写作有需求,教学则可侧重第二、三部分。教师可以把每个单元的论文作为样本,分析其结构和具体写法。教学有两种方法,一种只要学文献综述的写法,一种要学整个论文的写法。根据不同需要,在时间分配上可以调整。但不管如何,有两点都要学习:①第三部分的学术规范技能;②把文献综述或学术论文进行口头演示陈述。建议教师在课程结束时举办模拟学术研讨会,每个学生把自己的论文或研究成果进行陈述演示并用幻灯片演示出来。

除上述几部分,在全书最后的附录部分,本教材还提供大量材料供教学参考。

廖雷朝、蔡竹君、陈宁阳、李文、朱榴霞、赵苡珏等老师参与了本书的编写。

蔡基刚

2014年2月

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## *Unit 1*

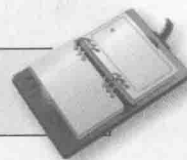
# *Research Projects and Writing Papers*

### **Learning Objectives**

In this unit, apart from 10 reading exercises organized around the text, you will learn how to:

- (a) choose a particular topic for your research;
- (b) formulate research questions;
- (c) write a working title for your research essay;
- (d) use outside sources by paraphrasing.

## *Focusing on Reading*



**Task 1** Skim Text 1 for the following information and identify the paragraph which contains it. Then exchange your answers with your partner.

No.	Information	Para.
1	Literature review is very important because it helps you to gain an insight into the topic you are researching.	
2	Academic honesty is required when reporting the result of the investigation or experiments.	
3	Research writing skills are critical to the academic studies and future career of college students.	
4	The emphasis on different parts should vary to tailor to the needs of different readers.	
5	It is necessary to provide enough information so that the reader replicate your experiment.	
6	A research report should clearly state its research questions which determine the scope of the research.	
7	A good research report should be readable and free from grammatical errors.	
8	There are many ways to ensure the accuracy and clarity of research writing.	
9	The issues arising from findings of the research such as the explanation, possible implications, recommendations and possibilities for further research need to be discussed.	
10	A research report is usually divided into four sections organized in a logical way.	

**Task 2** Scan Text 1 for the following questions.

1) Why is it important for college students and professionals to have good command of research writing skills?

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2) Why must we have a good knowledge of previous studies of the problem?

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3) Why is the procedure section important?

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4) What is the content of the discussion section?

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5) What are the major requirements of a research paper in terms of style?

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## Text 1

### Research Reports for Technical Writing

*By Wayne Losano*

#### INTRODUCTION

- A A surprising amount of one's time as a student and professional is spent reporting the results of one's research projects for presentation to teachers, managers, and clients. Indeed, without basic research skills and the ability to present research results clearly and completely, an individual will encounter many obstacles in school and on the job. The need for some ability is felt nearly equally by college students in all fields, engineering and science as well as business and the humanities. Graduate study often makes great demands on the student's research-writing skills, and most professions continue the demand; education, advertising and marketing, economics and accounting, science and engineering, psychology, anthropology, the arts and agriculture may all require regular reporting of research data. 5 10

#### ELEMENTS OF THE RESEARCH PAPER

- B The standard research report, regardless of the field or the intended reader, contains four major sections. These sections may be broken down into a variety of subsections, they may be arranged in a variety of ways, but they regularly make up the core of the report. 15
- C **Problem Section.** The first required section of a research report is the statement of the problem with which the research project is concerned. This section requires a precise statement of the underlying question which the researcher has set out to answer. In this section there should be an explanation of the significance—social, economic, medical, psychological, educational, etc.—of the question; in other words, why the investigation was worth conducting. Thus, if we set out, for example, to answer the question “What is the effect of regular consumption of fast foods on the health of the American teenager?” 20

we must explain that the question is thought to have significant relevance to the health of this segment of the population and might lead to some sort of regulations on such foods.

- D A frequent subsection of this problem sections is a review of past research on the topic 25  
being investigated. This would consist of summaries of the contributions of previous  
researchers to the question under consideration with some assessment of the value of these  
contributions. This subsection has rhetorical usefulness in that it enhances the credibility  
of the researcher by indicating that the data presented is based on a thorough knowledge of  
what has been done in the field and, possibly, grows out of some investigative tradition. 30
- E **Procedures Section.** The second major section of the research report details, with as much  
data as possible, exactly how the study was carried out. This section includes description  
of any necessary equipment, how the subjects were selected if subjects were used, what  
statistical technique was used to evaluate the significance of the findings, how many  
observations were made and when, etc. An investigation of the relative effectiveness of 35  
various swim-strokes would have to detail the number of swimmers tested, the nature of  
the tests conducted, the experience of the swimmers, the weather conditions at the time of  
the tests, and any other factors that contributed to the overall experiment. The goal of the  
procedures section is to allow the reader to duplicate the experiment if such were desired  
to confirm, or refute, your findings. 40
- F **Results Section.** The third, and perhaps most important, section of the research report is  
the presentation of the results obtained from the investigation. The basic rule in this section  
is to give all data relevant to the research question initially asked. Although, of course,  
one's natural tendency might be to suppress any findings which do not in some way  
support one's hypothesis, such dishonesty is antithetical to good research reporting in any 45  
field. If the experiments undertaken fail to prove anything, if the data was inadequate or  
contrary to expectations, the report should be honestly written and as complete as possible,  
just as it would be if the hypothesis were totally proven by the research.
- G **Discussion Section.** The final required section of a research report is a discussion of  
the results obtained and a statement of any conclusions which may be drawn from those 50  
results. Of primary interest in business and technical research reports is the validity of  
the results as the bases for company decisions: Will our planned construction project  
meet federal environmental guidelines and be approved for building? Will this new



program attract skilled personnel to our company? Will this new oil recovery technique be financially feasible? Thus, the discussion section of the research report must evaluate the research results fully: Were they validly obtained, are they complete or limited, are they applicable over a wide range of circumstances? The discussion section should also point out what questions remain unanswered and perhaps suggest directions for further research.

### STYLE OF RESEARCH REPORTS 60

H Research reports are considered formal professional communication. As such, there is little emphasis on a lively style, although, of course, there is no objection to writing that is pleasing and interesting. The primary goals of professional communication are accuracy, clarity, and completeness. The rough draft of any research report should be edited to ensure that all data is correctly presented, that all equipment is listed, that all results are properly detailed. As an aid to the reader, headings indicating at least the major sections of the reports should be used, and all data should be presented under the proper headings. In addition to their function of suggesting to the reader the contents of each section, headings enhance the formal appearance and professional quality of the report, increase to some degree the writer's credibility by reflecting a logical and methodical approach to the reporting process, and eliminate the need for wordy transitional devices between sections.

I Research data should be presented in a way that places proper emphasis on major aspects of the project. For different readers different aspects will take on different degree of importance, and some consideration should be given to structuring research reports differently for different audiences. Management, for example, will be most concerned with the results of a research project, and thus the results section should be emphasized, probably by presenting it immediately after the problem section and before the procedure section. Other researchers would be most interested in the procedure section, and this should be highlighted in writing up research projects for publication in professional journals or for presentation at professional conferences. For non-technical readers and federal agencies, the implications of the results might be the most important consideration, and emphasis should be placed on the discussion of the report for this readership.

J For additional clarity and emphasis, major results should be presented in a visual format—tables, charts, graphs, diagrams—as well as in a verbal one.