

根据教育部 2004 年《大学英语课程教学要求（试行）》编写

大学能力英语选修课系列教材

总顾问 胡壮麟 总主编 王正元

大学能力英语

走进科学世界 I

Abilities in English for College Students

大学能力英语选修课系列教材 I

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根据教育部 1999 年《大学英语课程教学要求（试行）》的精神，为保证学生大学英语学习四年不断线，由全国重点大学合作编写了这套大学能力英语选修课系列教材。

《大学能力英语》基于“以任务为导向”（task-based learning）的编写理念，突出语用行为原则，每单元围绕某一专题从听、说、读、写、译五方面训练学生的语言交际能力。每册图书配赠一张听力光盘。

《大学能力英语——走进科学世界 I》涵盖诺贝尔奖、海啸、药品与保健、基因食品、人类感官、核武器、小行星、机器人、汽车、自然等生动有趣的科研话题，共 15 个单元。

本书适合做大学本科低年级非英语专业选修课教材，也可供学生自学使用。

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序

《大学英语课程教学要求 试行》是当前我国大学英语教学改革的指导文件。这个文件对大学英语的教学性质和目标、教学要求、课程设置、教学模式、教学评估、教学管理都有详尽而清楚的阐述。字里行间，洋溢着崭新的现代教学理念。如：

“大学英语是以英语语言知识与应用技能、学习策略和跨文化交际为主要内容，以外语教学理论为指导，并集多种教学模式和教学手段为一体的教学体系。大学英语的教学目标是培养学生的英语综合能力和应用能力，特别是听说能力，使他们在今后工作和社会交往中能用英语有效地进行口头和书面的信息交流，同时增强其自主学习能力，提高综合文化修养，以适应我国社会发展和国际交流的需要。”

“各高等学校应当根据实际情况，……设计各自的大学英语课程体系，将综合英语类、语言技能类、语言应用类、语言文化类和专业英语类等必修课程和选修课程有机结合，以确保不同层次的学生在英语应用能力方面得到充分的训练和提高。”

由于各校有关大学英语教学的领导和教师对这个文件非常熟悉，我不一一引述。我只想就这两段谈谈我的看法。我觉得《教学要求》颁布后，大学英语界，特别是出版社在出版大学英语教材方面的认识有提高，如或在大学英语教材中增加听说内容，以弥补现有教材的不足；或单独编写或引进出版听说教材，从实处上突出听说教学；除纸质教材外，大力开发网络课程教学系统；在教材编写方面，尽量贯彻“个性化学习自主式学习”的原则，等等。但我总觉得这还不够，大学英语界对上述第二条引文没有表现出太大的兴趣。人们似乎满足于“综合英语类”的教材和教学，对“语言技能类、语言应用类、语言文化类和专业英语类”的教材和教学考虑较少。事实上，没有这些选修课程的配合，很难实现“提高综合文化修养，以适应我国社会发展和国际交流的需要”；很难做到“必修课程和选修课程有机结合”；“很难保证不同层次的学生在英语应用能力方面得到充分的训练和提高”；也无法完成“注重培养语言运用能力和自主学习能力的教学模式的转变”。

令人宽慰的是总有一些出版社（如出版本系列的机械工业出版社）和教师（如以王正元教授领衔的各校教师）目标明确、不惧困难，埋头苦干，众志成城。“大学能力英语选修课系列教材”的出版是最好的说明。我个人认为这套教材具有以下特色：

- 教材编写依据上有《教学要求》，下有各校的具体需求。
- 选材原则注意时代性、实用性、趣味性、多样性。
- 编写原则突出任务型教学，反映了当代功能主义的教学理论。
- 每个单元，围绕主题，听说读写译有效整合。
- 培养学生在语境中自主学习，掌握语用能力。

显然，这些特色来自较多先进的教学理念，其核心是上述的“任务型教学”。国内任务型教学在中小学教材和教学中出现较多，在大学圈内也有倡导的。从反馈看，肯定的

多，持异议的也有。如今“大学能力英语选修课系列教材”的出版，将为我们提供宝贵的经验。具体说，一套教材只有在使用中才能得到检验和完善。在学中干，在干中学，我们的编者本身就是在体验实施“任务型教学”。我相信他们能够成功。我预祝他们成功。

胡壮麟
四四年 苑月
北京大学蓝旗营

前摇摇言

根据教育部《大学英语课程教学要求（试行）》“培养学生的英语综合应用能力，特别是听说能力，使他们在今后工作和社会交往中能用英语有效地进行口头和书面的信息交流，同时增强其自主学习能力，提高综合文化素养，以适应我国社会发展和国际交流的需要”的大学英语教学目标和“将综合英语类、语言技能类、语言应用类、语言文化类和专业英语类等必修课程和选修课程有机结合，形成一个完整的大学英语课程体系，以确保不同层次的学生在英语应用能力方面得到充分的训练和提高”的大学英语教学改革的要求，我们编写了这套大学能力英语选修课系列教材。我们在编写过程中力图使教材突出以下特点：

一、确定以培养学生英语能力为目标

我们在编写这套教材时，大家认真讨论了这样一个问题：学习英语干什么？为了用英语交际。靠什么去交际？靠英语能力。所以我们在编写过程中坚持以培养学生英语能力为目标，而教学互动、情景功能、体验等最终应当落实在英语能力的打造上；英语能力是英语学习的最终目标，其他大多数都是为打造能力服务的方法；形成不了英语能力的学习，应该说是效果不佳的学习。所以，我们在这套教材编写大纲中确定了以培养学生英语能力为目标，把这套教材定名为“大学能力英语”。

二、坚持“以任务为导向”（~~任务型教学法~~）的外语教学理念

我们在教材编写中考虑的第二个问题是：既然教材的主旨是培养学生的英语能力，那么什么形式能更有效地培养学生的英语能力呢？语言专家和学者们经过长期的探索和经验积累提出了很多科学的外语教学法，这其中以完成任务为导向的学习法对培养学生英语能力更直接、更有效。比如说让学生去听两个美国人围绕一个话题说英语，按照范文去套写一篇英语文章，这样的学习者只是站在第三者的立场上为学习而学习，是一种模仿学习。这种学习往往是被动的、等待的，缺乏带着任务学的身临其境的感受和动力。如果把课程设计成让学生去完成某种任务，以言行事，以言取效，把语言看成是取效行为，这样会有力地调动学生的学习积极性。所以我们在编写这套教材时，尽量明确交际任务，让学生主动地去体验如何完成交际任务，把完成交际任务作为培养提升能力的导向。完成任务型的“实战演练”是培养、打造学生英语能力的有效方法。所以，我们设计的这套教材努力体现：任务的相关性，输入、活动、目标、教师角色、学生角色和环境任务构成的六个因素，输入、加工、输出行为，发展学生的思维能力和以言行事的言语取效行为。

三、突出学习者为主体的角色行为

我们在编写这套教材时始终注意的另一点是，不要把学生看成单纯的英语学习者，单纯的学习者往往是被动的背诵者、复述者、消极地接受输入者，他们像站在圈外向圈内看的观众，因输入多、输出少而缺乏言语行为的动力。如果我们把学习者看成是任务

的完成者，把他们放到交际环境中去扮演一个角色，而且这个角色同他们将来可能的工作能结合到一起，这会使他们有一种完成任务的使命感，在以言行事的言语交际行为实践中提高在一定语境中的语用能力。我们考虑的另外一点是，一个人的能力是在实践中锻炼提高的，语言学习也是如此，如果脱离了语言实践，很难有真正的语言交际能力。所以在这套教材设计中把学习者设计成完成工作任务的“角色”，以增强语言交际锻炼的目的性、实践性；每课都以完成任务作为贯穿全篇培养英语听、说、读、写、译能力的主线，听、说、读、写、译的交际活动都是为了完成任务的交际行为，力求把任务的完成与学习者的岗位、责任、生涯意识结合在一起。

本套教材的构成及使用建议：

为了满足不同层次学生在英语应用能力方面得到锻炼和提高的要求和高校不同专业学生对不同专业英语的需求以及人才市场对就业学生英语能力的要求，本着实用性、知识性和趣味性相结合的原则，为学生的个性化、自主式学习提供选择和方便，这套大学能力英语选修课系列教材分四类共八本：《大学能力英语——走进国际商务》Ⅰ、Ⅱ；《大学能力英语——走进社交》Ⅰ、Ⅱ；《大学能力英语——走进多元文化》Ⅰ、Ⅱ；《大学能力英语——走进科学世界》Ⅰ、Ⅱ，可供非英语专业大学三、四年级作英语选修课教材，也可用作非英语专业大学英语任选课、必选课教材。每课包括以完成任务为主线的听、说、读、写、译五部分；每本书都附听力 悦阅 练习答案，因此本套教材也可作为非英语专业学生的自修教材。

我国著名语言学家、博士生导师胡壮麟教授担任本套教材总顾问，燕山大学外语学院王正元教授担任总主编。各册主编分别为：

- 《大学能力英语——走进国际商务 Ⅰ》 王正元教授
- 《大学能力英语——走进国际商务 Ⅱ》 吴敏华副教授
- 《大学能力英语——走进社交 Ⅰ》 李冬琦教授 张东辉副教授
- 《大学能力英语——走进社交 Ⅱ》 王燕教授
- 《大学能力英语——走进多元文化 Ⅰ》 王正元教授
- 《大学能力英语——走进多元文化 Ⅱ》 张萍教授
- 《大学能力英语——走进科学世界 Ⅰ》 谢亚琴教授 钟秀平副教授
- 《大学能力英语——走进科学世界 Ⅱ》 陆军副教授 欧阳铨教授

本套教材的编写工作得到了主编单位的大力支持；哈尔滨工程大学、天津大学、辽宁大学、哈尔滨工业大学、燕山大学、天津医科大学、沈阳师范大学、北京外国语大学等十几所高校的三十余名英语专家、教授、副教授、中青年骨干教师参加了本套教材的编写工作，英、美籍英语专家审读了全部书稿；燕山大学外语学院刘德慧院长、辽宁大学外语学院陈峰院长对本套教材的编写工作给予了大力支持，在此一并表示衷心感谢。

大学英语改革是一项艰巨而又十分重要的工作，教材建设任重而道远。编写这套以完成任务为导向、以培养交际能力为目的的教材是一种探索，一定会有缺点和不足，欢迎专家、学者、师生批评指正，提出改进意见。

王正元
二〇一〇年元月

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Overall Map 全书预览

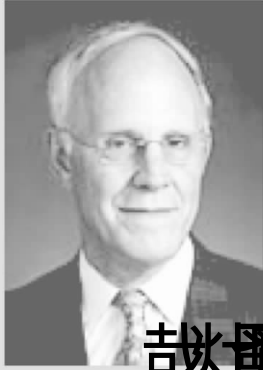
Unit 1	Listening	Speaking	Reading	Writing	Translating
2004 Nobel Prize Laureates in Physics	Telephone interview with Professor David J. Gross	- Interview: elicit information and opinion on Nobel Prize issues. - Interview: find out if some students have high expectation of their career, like winning the Nobel Prize	Understand the news report about Professor Frank Wilczek	- The key features of news report - Write a news story of approximately 300 words about Professor H. David Politzer, another 2004 Nobel Prize winner in physics	- English-Chinese: Nomination and Selection of the Nobel Laureates 59 MIT-related Nobel Prize winners include faculty, researchers, alumni and staff
Unit 2	Listening	Speaking	Reading	Writing	Translating
Fighter for the Forests	News story: Wangari Maathai, the 2004 Nobel Peace Prize winner	Interview: give an interview with an environmentalist	Understand an article about an environmentalist who won 2004 Nobel Peace Prize	- How to use quotes appropriately - Write an article of a famous person you know or you are fond of	English-Chinese: China fears Everest is shrinking
Unit 3	Listening	Speaking	Reading	Writing	Translating
Animal emotions	Understand and learn things from the animal program from Discovery Channel in English	Understand Sonya Fitzpatrick's telepathic skills to communicate with animals	Understand the information given on animals' thinking ability	Write an essay exposing the great apes' thinking ability	Translate some of the information related to animals from English to Chinese and vice versa

Unit 4	Listening	Speaking	Reading	Writing	Translating
The Big Tsunami	A news report on the big tsunami	- Talk about a kind of natural disaster - Interview: interviewing a deputy director with the marine environmental forecasting office	Read an article on the subject of the big tsunami and related things	- Introduce the purpose and the basic elements of a news story - Write a news story about the recently happened tsunami in the southeast Asian countries	English-Chinese: a passage about the tsunami
Unit 5	Listening	Speaking	Reading	Writing	Translating
Science and Fitness	Interview: radio program on “killer workout”	- Discussion on how to lose weight - Radio hotline program	understand an article about the relationship between sleep and losing weight	- How to write an essay - Write an essay on whether we should try to lose weight	- English-Chinese: package size affects how much we eat - Chinese-English: Hunger resulting from inadequate sleep
Unit 6	Listening	Speaking	Reading	Writing	Translating
Herbal Health Products: What You Should Know	A passage about the traditional Chinese medicine	Talk about some traditional Chinese remedies	Understand an article on traditional Chinese remedies	- Steps for writing good product descriptions - Write a product description	- English-Chinese: a short passage about a particular medicine - Chinese-English: a short passage about malnutrition

Unit 7 Music and Intelligence	Listening Understand the listening material and exchange your ideas with others	Speaking Design a program to show how music works on your brain	Reading Read and comprehend the articles “Music Makes You Smarter?!”	Writing - Some secrets of writing a speech - Write a speech	Translating Translate the messages from English to Chinese and vice versa
Unit 8 Genetically Modified Food	Listening Understand the listening material on GM foods	Speaking Express different attitude about GM foods in English	Reading Read and comprehend the articles on GM foods	Writing Write out something about GM Foods with supporting pros or cons in the debate	Translating Translate some of the passages related to GM food from English to Chinese
Unit 9 Human Senses	Listening Listen and understand the information on laser eye surgery for better eyesight	Speaking Talk about some vision problems and discuss about the functions of senses	Reading Understand the information given on aging changes in the senses	Writing Write a passage to show the equal importance of 5 senses, using proper link words to show the addition	Translating Translate some of the information related to senses from English to Chinese and vice versa

Unit 10	Listening	Speaking	Reading	Writing	Translating
Nuclear Power and Nuclear Weapons	The VOA news on nuclear issues including nuclear weapons and nuclear accidents	Talk freely about some nuclear-related issues by using some simple words	Get to know and understand the controversy over nuclear waste disposal	Write a passage about nuclear, using proper link words to show the contrast	Translate some of the information related to nuclear issues from English to Chinese and vice versa
Unit 11	Listening	Speaking	Reading	Writing	Translating
Asteroid and Doomsday	Understand the live TV interview in English	Talk about some collision happenings in English	Read more information on net and have a global understanding of astronomical knowledge	- Some basic rules for writing a scientific paper - Write a scientific essay on the topic	Translate the messages from English to Chinese and vice versa
Unit 12	Listening	Speaking	Reading	Writing	Translating
Bionic Youth: Technology and Today's Children	Interview: the technology and kids in the developing countries	- Debate on the use of lethal equipment in videogames - Express your opinions of the impact of high-technology on the young people	Understand an article about the impact of technology on the young people from a variety of angles	- Distinguish facts from opinions in a news story - Write a real news story on the subject of cheating on campus by using high-tech gadgets	- English-Chinese: junk mail - Chinese-English: a news report indicating the potential customers of game-console

Unit 13	Listening	Speaking	Reading	Writing	Translating
Cars—Yesterday, Today and Tomorrow	TV program: why cars need to be green?	- Talk about new concept cars - Car dealing: talk about the special features of <i>Mercedes-Benz New S 65 AMG Sedan</i>	Read an article on Hydrogen Power; a discussion with Chris Borroni-Bird	- How to collect information while preparing for a writing - Write an essay on Cars—Yesterday, Today and Tomorrow	- English-Chinese: Birth of Cars - Chinese-English: The early history of cars
Unit 14	Listening	Speaking	Reading	Writing	Translating
Cockroach robots	Understand the news broadcasting about Robotic Point Man in Afghanistan in English	Talk freely in English about the usage of robots in wars	Understand the information given in the passage “robotic surgery”	Write an essay about the possibility of making a robot mimic a cockroach walk, using the investigative and interactive questioning writing technique	Translate some of the information related to cockroach robots from English into Chinese and vice versa
Unit 15	Listening	Speaking	Reading	Writing	Translating
Science and Humanity	Understand a conversation between an FBI agent and an innocent criminal in English	- Discussion: the morality of science - Interview: interviewing a well-known biochemist on the subject above	An essay about the relationship between science and humanity	- The common structure of editorial - Write an editorial on the relationship between science and humanity	English-Chinese: a passage of the famous scientist Robert Oppenheimer



获奖者

David J. Gross

1/3 of the prize

USA

Kavli Institute for

Theoretical Physics

University of California

Santa Barbara, CA, USA

Born in 1941



H. David Politzer

1/3 of the prize

USA

California Institute of

Technology

Pasadena, CA, USA

Born in 1949



Frank Wilczek

1/3 of the prize

USA

Massachusetts Institute

of Technology (MIT)

Cambridge, MA, USA

Born in 1951

2004 Nobel Prize Laureates in Physics

2004 年诺贝尔物理学奖

Task

You might be interested in Nobel Prize. Now, suppose you, a journalist for China Daily, are expected to write a special issue on this year's award, which is also the 100 anniversary of the Prize. Can you understand the interview in English after the announcement of the 2004 Nobel Prize in Physics? Are you able to translate the information related to the Nobel Prize from English into Chinese or vice versa? Can you write a brief introduction of a laureate? You should be able to

- ◆ understand the interview in English ;
- ◆ carry out interview and answer questions in English ;
- ◆ understand the news report of Professor Wilczek ;
- ◆ write a brief report about a person or an event ;
- ◆ translate some of the information related to the Nobel Prize from English to Chinese and vice versa.

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Task A Study These Words

Listen to the telephone interview with Professor David J. Gross after the announcement of the 2004 Nobel Prize in Physics, October 5, 2004. The interviewer was Joanna Rose, a science writer. Study the words from the phone interview before listening to the tape recording.

Stockholm	the capital of Sweden (斯德哥尔摩)
the Nobel Foundation	the organization established by the Swedish inventor of dynamite, which offers the Nobel Prize every year for outstanding achievements in literature, science and promotion of world peace
foster	to encourage, promote
theoretical	relating to the study of ideas, especially scientific ideas rather than the practical use of the ideas or practical experience
verdict	an official decision made by authority
verify	to discover whether something is correct or true
symmetry	the quality of having two halves that are exactly the same shape and size
verification	verifying

Task B True or False

Listen to this telephone interview again, and choose *T* if you think the statement is true according to the passage you have just heard and *F* if it is false.

- T/F 1. The interviewer is Joanna Rose from the head office of Nobel Foundation.
- T/F 2. Professor David Gross was still feeling shocked.
- T/F 3. Professor David Gross was sure that he was going to get the prize from the very beginning.
- T/F 4. Professor David Gross believes only Nature can be always right, while theorists can make mistakes.
- T/F 5. Frank Wilczek used to be Professor David Gross' colleague.
- T/F 6. Professor David Gross admitted, although in a subtle way, that Frank Wilczek

was extraordinary in some sense.

T/F 7. Professor David Gross advises young students to think of important problems and work their best to change the nature.

T/F 8. Professor David Gross wanted to be a scientist since he was 13 , although he was not sure in which field he would work.

Task C

Fill in the Blanks

Listen to this telephone interview again and fill in the blanks with the exact words or expressions from the tape recording.

1. I'm calling from Nobelprize Org , which is the (1) of the Nobel (2). So , we thought that we could put this interview on the (3) , if it's O. K. for you.

2. —I talked to Frank Wilczek. He said that he was sure that the (1) were worth a Nobel Prize. But , not you.

—You mean he was sure (2) ? Day one ? He was sure that it was worth a Nobel Prize ?

—Yes.

—Is that what he said ?

—Yes. That's what he said.

—Well , he was much younger and more (3) then. Well , you know , I think it took me three years before the (4) evidence was strong enough , then I said , " this is (5) true. "

3. —So , this is what you think , that the theory must be (1) . . .

—Oh sure. (2) can be wrong , only (3) is always right.

4. —Are you (1) now new Nobel Prize winners ?

—I certainly hope so. Well again , I'm the director of a/an (2) of theoretical physics where I see lots of (3) Nobel Prize winners. But , as theorists , one has to wait for Nature's (4) as well. Some of the ideas are wonderful. And , maybe they're even true.

5. Right. But there are even other ideas that have been around. Theorists have wonderful ideas which take years and years to be (1). Super symmetry is one that we're waiting and waiting for (2) for.

6. Well , the advice I tell students is to think about the (1). I mean , work on anything you can work on where you can (2). But always keep in mind the big problems. The ones that are truly important. And , watch carefully what Nature is trying to tell us.