

面向 21 世纪英语学习丛书

科技英语选读

(1)

主编 梁孟华

主审 吴铭方



石油大学出版社

面向 21 世纪英语学习丛书

总 序

21 世纪将是高科技信息化时代,人类知识将成倍增长。英语在 21 世纪中无疑将是全世界最重要的国际交际手段之一,是 21 世纪人才在生活、工作、学习和娱乐上不可缺少的工具之一。因此,掌握英语不仅是当今我国大学生必需具备的一种基本的高科技素质,而且是我国民族文化素质的体现。

如何帮助大学生更有效地学会英语,成为 21 世纪有用之才,是我们编辑《面向 21 世纪英语学习丛书》的主要宗旨。

本丛书将从英语词汇和语法知识学习上、从英语语言的听、说、读、写、译诸方面技能训练和提高上、在英语学习方法和学习策略上以及在各种考试的应试能力的提高上向读者提供全方位多层次的帮助。

为此,本丛书根据当前我国大学生在英语学习上存在的困难和实际需要,组织长期从事大学英语教学、有丰富教学经验的高校教师、教授和专家参加编写。

本丛书的主要任务是帮助大学生提高实际应用英语的能力,扩大和增加语言知识,改进学习方法,提高学习效果。本丛书从全新的视角帮助读者打好语言基础,练好语言基本功,过好英语学习关,从而顺利地通过大学英语四、六级考试和研究生入学考试,达到“更快、更好”地学

习英语的目的。为此,本丛书将遵循各类英语教学大纲要求,本着“加强语言基础,提高语言应用能力”的目的,紧紧围绕中国学生在英语学习上的重点、难点和疑点以及考试中的要点和热点组织编写,从基础阶段英语学习到专业阅读、应用提高阶段英语学习,从课堂教学到课下自学和第二课堂活动以及从大学四、六级英语考试到研究生入学英语考试等方面的各类书籍。

本丛书将以“实用、新颖、多样”的特色奉献给读者,为广大读者在走向 21 世纪历程中学好英语助一臂之力。

本丛书编写是初次尝试,疏漏和不足之处在所难免,敬请广大读者和同行专家不吝赐教。

《面向 21 世纪英语学习丛书》

总主编 吴铭方

1998 年 7 月

前 言

当前,大学外语教学改革的重点就是要培养大学生实际运用语言的能力,提高他们的综合素质。学习外语不仅是要打好语言基础,加强基本功训练,更重要的是要学以致用,通过阅读来获取有关信息,顺利完成从学习英语到使用英语的转变。

本书以上述目的为宗旨,以在校大学生特别是通过大学英语四、六级的学生以及预备考研和继续深造的英语爱好者为主要对象,为大家提供系列的阅读材料,使读者通过独立阅读来扩大科技英语的词汇量,提高阅读速度和阅读理解能力,同时通过学英语来了解科技界的新的发展动态,并培养在未来工作中实际使用英语的能力。

本书内容涉及广泛,包括计算机、自动化、能源交通、太空科学、环境保护、经济金融、人类社会、语言学习等热门话题。文章均选自近年来国内外发行出版的书刊、杂志、报纸,特别注意材料的知识性、趣味性和可读性。每课后附有词汇表(不包括大纲上的四级词汇)、惯用语与词组、语法难点及背景知识的注释,以及主观型的问答题,可用于阅读口语课的讨论和口头表达练习,书后还附有汉语译文,以便于读者对照参考。

在本书的编辑过程中,吴铭方教授给予了大力的支持和具体的指导,外籍教师 Judith Musselman、外语系的王桂琴同志都协助

做了大量的工作,在此谨表示衷心的感谢。

因时间及水平有限,我们的编译工作难免有不足和疏漏之处,诚恳希望广大读者予以批评指正。

编者

1998年7月

目 录

Unit 1	Telecommuters	(1)
Unit 2	Meet My Friend	(8)
Unit 3	Energy Sense Makes Future Sense	(13)
Unit 4	Computer Viruses	(18)
Unit 5	Big Number and Infinities	(26)
Unit 6	The Development of Civilization	(30)
Unit 7	The 21st Century Vehicles	(35)
Unit 8	The Second Information Revolution	(42)
Unit 9	What Computer Can Do for the Future	(51)
Unit 10	Health Effects of Smog: Worse than Thought	(58)
Unit 11	High-Definition TV	(64)
Unit 12	What Is Multimedia, Anyway?	(70)
Unit 13	Levitating Trains	(76)
Unit 14	Earthquake: Experts Shaken	(83)
Unit 15	The Credit Card Economy	(89)
Unit 16	Electronic Mail	(97)
Unit 17	A Distinguished Recommendation	(106)
Unit 18	Oil	(113)
Unit 19	The Current State of the World Environment	(121)

Unit 20	What's Wrong with Our Weather	(129)
Unit 21	The Future of International Trade	(137)
Unit 22	A Shot Across the Earth Bow	(146)
Unit 23	An English-Speaking World	(156)
Unit 24	Far-out Music	(165)
Unit 25	New Scientific Breakthroughs	(173)

参考译文

Unit 1	远程办公	(183)
Unit 2	人机对话	(187)
Unit 3	能源与未来	(189)
Unit 4	计算机病毒	(192)
Unit 5	大数和无穷数	(196)
Unit 6	文明的发展	(198)
Unit 7	21 世纪的汽车	(200)
Unit 8	第二次信息革命	(203)
Unit 9	计算机的巨大功效	(206)
Unit 10	烟雾对健康的危害:超乎想像	(208)
Unit 11	高清晰度电视	(211)
Unit 12	究竟什么是多媒体	(213)
Unit 13	磁悬浮列车	(215)
Unit 14	地震使科学家困惑	(218)
Unit 15	信用卡经济	(220)
Unit 16	电子函件:新时代的通讯	(223)
Unit 17	一封杰出的推荐信	(226)
Unit 18	油	(228)
Unit 19	世界环境现状	(231)
Unit 20	我们的气候怎么了?	(234)
Unit 21	世界贸易的前途	(237)

Unit 22	警告地球	(240)
Unit 23	说英语的世界	(244)
Unit 24	送往太空的音乐	(247)
Unit 25	科技发展新突破	(250)

Unit 1

Telecommuters

[1] Today we report about the growing number of Americans who stay at home to do their jobs.

[2] Most American workers travel everyday to jobs in factories, offices, laboratories, stores and schools. For a growing number, however, the work place is changing. More Americans are choosing to work at home. Link Resources is a research company in New York. The company says about 40 million people work at home. This is about 30 percent of the total work force in the United States. Some of the people work at home part time. Some work at home all the time.

[3] About 24 million people in the United States operate business in their home. About 9 million bring work home from their office to complete after business hours. About 7 million people use a computer to work at least one day a week at home. They spend 4 days a week at their company's office. When people drive a car, or take public transportation to their job, they are called commuters. When they are linked to their job by telecommunications equipment, they are called telecommuters. The number of telecommuters in the United States grew about 20 percent last year. That was a faster growth rate than any oth-

er kind of home workers.

[4] The revolution in computer and telephone technology is the main reason for the increase. More Americans now have computers and other telecommunications devices in their home. Computer users can send information to other computer users with a device called a modem. Computer users also can receive many kinds of information from special computer services. More and more workers also have * facsimile or fax machines^① in their home. This machine uses telephone lines. It can send copies of printed documents to other fax machines anywhere in the world.

[5] In the City of Los Angeles workers and employers are reconsidering the possibilities of working at home. In January the city suffered a serious earthquake. The quake destroyed several major roads in the area. It prevented millions of people who live near Los Angeles from driving their cars to their offices in the city. More Los Angeles' companies and government agencies now are permitting their workers to work from home using computers and other telecommunications devices.

[6] Two years ago Los Angeles City official began testing a program to permit more than 240 city workers to work at home. These included designers, engineers and lawyers. A recent study found that such telecommuters were 12 percent more productive than similar workers in city offices. It said they produced more reports, completed more cases, and studied more materials. City officials say telecommuting may be good for another reason. It could save money by reducing the need for office space. Now Los Angeles is proposing to expand telecommuting to as many as 50 thousand workers. This is about 30 percent of the city

government's work force.

[7] The telecommuting program in Los Angeles was established in 1991. Its goal was to find a way to reduce the number of cars on the roads during early morning and late afternoon. The city began the program because of * Amendments to the Federal Clean Air Act.^② This law says businesses with one hundred or more workers in cities with serious air pollution must reduce the use of cars by workers. Experts say telecommuting is a good solution to the problem of air pollution caused by too many cars.

[8] The mayor of Los Angeles, Richard Reardon has started a new telecommunications program. He wants to make Los Angeles the nation's most modern telecommuting center. Mr. Reardon hopes that up to one million people will take part in the program. These people will work in their home, or they will work in a special telecommuting center near their home. The center will be connected to a main office by computers.

[9] Designers of new communities are including telecommuting centers. So people will not have to travel long distances to their office. John Lifdon is a building designer in Telluride, Colorado. He is planning a small town for people who choose to work at home. John Lifdon say his town will be called Skyfield. It will be near Telluride. Two thousand people will live in the town. It will have the most modern telecommunications equipment. It also will have schools and sports centers. He hopes to begin building the town next year. Mr. Lifdon calls people who work at home information-independents. They can live and work anywhere they want. He believes that more information-indepen-

dents will choose to move from cities to the country during the next 25 years.

[10] Telecommuting is a big change in the way Americans work. Some employers are not willing to accept the change. Some worry that workers at home will spend too much time resting or watching television instead of working. Others worry that they will not be able to control their workers. Experts are studying and debating the issue. One is Robert Musgowits, president of the American Telecommuting Association. He says workers should be judged by how much work they do, not by how much time they spend in the office.

[11] Mr. Musgowits says studies show that telecommuters are about 20 percent more productive than similar workers in offices. They work best when they work one to three days a week at home and the rest of the week in the office. Not all workers work best at home, however. Successful homeworkers must be independent. They must be organized. They must set work goals for themselves. And they must be able to work with little supervision.

[12] Most people who work at home do not work for companies. They operate their own business. Many are computer experts. Others sell products or services. Some are writers. Some are designers or engineers. Others are financial advisers, lawyers or criminal investigators. Some provide information or other services for businesses. Many of these people used to work for large companies. Now they use their skills and experience to operate their own business.

[13] Experts say the personal computer has become the

main tool for many new home businesses. There even is a magazine for home office workers. It is called Home Office Computing. Bernice Ded Grey is the executive editor of the magazine. She says 400 thousand people receive the publication. And she says the number of readers is growing by 50 percent a year. Home Office Computing magazine offers advice for people who operate business at home using their computer.

[14] People enjoy working at home for many reasons. They save time by not having to travel long distances to work everyday. They save money on transportation and business clothes. Some people say they can think more clearly and be more creative in the quiet peaceful atmosphere of their home. And some say they suffer less stress. People who work at home have the freedom to decide for themselves how and when to do their job. This permits them to spend more time with their family.

[15] Other people who work at home admit there are problems. Some say they can not separate their personal life and their work life. They begin working too many hours at home. Another problem is loneliness. One man says he feels lonely because he is the only person on his street who is home during the day. Some home workers say they need to be with other people to communicate and develop new ideas. And some say it is more difficult to get a better job when you are not seen in the company's office everyday. Finally, there is a problem of holidays. As one woman says, "The main problem with working at home is that you never get a day off."

Questions:

1. What kinds of people are called commuters and telecommuters?
2. What makes it possible for growing numbers of people to work at home?
3. What are the advantages and disadvantages of telecommuters?
4. On what purpose was the telecommuting program established at its beginning?
5. What are some employers' concerns about the telecommuting system?
6. What are most telecommuters' careers?
7. If possible, would you like to be a telecommuter? Why or why not?

Vocabulary

- | | | | |
|----------------------|------------------------|----|------------------|
| 1. telecommuter | [ˈtelɪkəmju:tə] | n. | 远程办公者 |
| 2. telecommunication | [ˈtelɪkə,mjuniˈkeɪʃən] | n. | ① 电信② (复)电信学 |
| 3. commuter | [kə'mju:tə] | n. | 使用月、季票乘车者,通勤者 |
| 4. agency | [ˈeɪdʒənsi] | n. | (政府的)机关、局、机构;代办处 |
| 5. debate | [dɪˈbeɪt] | v. | 讨论,争辩 |
| 6. productive | [prəˈdʌktɪv] | a. | 有收获的,很多成果的,多产的 |
| 7. supervision | [ˌsju:pəˈvɪʒən] | n. | 监督,管理,督导 |
| 8. executive | [ɪgˈzekjʊtɪv] | a. | 执行的,行政的 |

- | | | |
|----------------------------|-----------|---------------------|
| | <i>n.</i> | 行政官 |
| 9. loneliness ['lounlinis] | <i>n.</i> | 孤独, 寂寞, 人迹稀少 |
| 10. modern ['moudem] | <i>n.</i> | 调制解调器 |
| 11. facsimile [fæk'simili] | <i>n.</i> | 复制, 传真, (口语) 亦作 fax |
| 12. amendment [ə'mendmənt] | <i>n.</i> | 修正案, 改良, 改善 |

Phrases and Expressions

- | | |
|----------------------|------|
| 1. operate business | 经营业务 |
| 2. financial adviser | 财务顾问 |
| 3. get a day off | 放一天假 |

Notes

- ① Amendments to the Federal Clean Air Act 联邦空气清洁法修正案

Unit 2

Meet My Friend

[1] One of the advantages of teamwork is that a scientist can discuss his idea and progress with colleagues in the team who are intelligent, * aware of the way he thinks, and knowledgeable about the subject.^① The ideal friend for a research worker would probably be one who would listen sympathetically, make relevant comments based on a wide knowledge, * and suggest additional lines of investigation.^②

[2] A report published in the United States in 1968 by * the U. S. National Research Council^③ suggests that a computer might provide this service. The report, called * Communication Systems and Resources in the Behavioral Sciences,^④ places its main stress * on how to provide the research worker with relevant information.^⑤ The problem is not just to supply the scientist with the data he requests, but to inform him of the existence of data which he may not know of, * or which he may not at first have thought relevant.^⑥ In other words, the computer would be asked to provide * the sort of service expected of an intelligent, informed friend.^⑦

[3] In other fields, as well, people are looking forward to

the possibility of a person discussing his problems with a computer — establishing a dialogue between man and machine. In psychiatry, the dialogue between doctor and patients is usually guided along the lines which the psychiatrist regards as most useful. Could a computer be programmed to do the psychiatrist's work for him, or at least conduct one or two of the dialogues?

[4] Researchers at Stanford University in the United States have experimented in this direction. The psychotherapeutic dialogues conducted by the computer in this experiment correspond to the first or second interview between psychotherapist and patient. The patient types a message on a keyboard linked to the computer. The computer replies with a typewritten answer designed to produce a further response from the patient.

[5] The program is based on the concept of "key words". Certain topics are more important to the psychotherapist than others. The computer recognizes the important topics by identifying key words in the patient's sentences — more than 500 words and word groups can be picked out by the computer as significant — and the replies given by the computer encourage the patient to continue "talking". If the computer finds no such key words in the patient's input, then its reply aims at leading the patient on to important topics.

[6] The Stanford researchers admitted that their original program was inadequate, as the computer did not always * understand what was said to it.[®] Nevertheless, * this may well lead to the day when[®] people will break off more normal conversations with the words "I must go. I have a session with my computer."