

余清秀 © 主编

高等院校高级英语教材

GAODENG YUANXIAO GAOJI YINGYU JIAOCAI

科技英语

English



Selected Readings
In Science And Technology



西南交通大学出版社

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主编：余清秀

编委：江久文 刘 禹 徐 鹰 罗 强

王 惠 马洪慧 官艳玲 杨 红

张梅子 吴正群 谭 勇 何俊彦

前 言

随着新世纪的到来和中国加入 WTO 以及科学技术的突飞猛进, 英语在越来越广泛的领域中发挥着重要作用, 如何提高科技英语阅读能力就受到越来越多的关注。新修订的《大学英语教学大纲》明确提出大学英语应保证四年不断线, 要求各校根据实际情况开设高级英语课程。本教材在此背景下应运而生。

本书可作为大学三、四年级高级英语教材。全书共分 12 个单元, 每单元由 Text A、Text B 组成。Text A 可作为课堂讲解, 文后配有多种练习题型, 旨在检测课文学习的同时巩固已学知识; Text B 一般作为学生课外阅读, 文后配有阅读理解检测题。

《科技英语》所选内容丰富, 涉及工业、经贸、生物技术、信息技术、航空航天、环境保护、计算机技术等方面, 既有科技发展的最新成就, 也有对科技发展所带来的社会变化的深思。当你坐下来翻阅这一篇篇文章时, 你将被带入到一个全新的世界; 一个听说过, 读到过, 但又很不熟悉的世界; 一个让你时而顿足、时而沉思的世界。

国与国之间, 会有文化上的差异, 我们应客观辩证地看待作者对科技发展和社会变化之间关系的思考。但更重要的是, 在这里我们不仅可以欣赏原文优美地道的语言, 还可以把专业学习与英语学习进行有机的结合, 提高阅读兴趣, 为进一步的专业英语学习打好基础。

本书由余清秀统筹主编, 具体编写分工如下:

余清秀: Unit 1; 刘禹: Unit 2; 徐鹰: Unit 3; 罗强: Unit 4; 王惠、马洪慧: Unit 5; 江久文: Unit 6; 官艳玲: Unit 7; 杨红: Unit 8; 张梅子: Unit 9; 吴正群: Unit 10; 谭勇: Unit 11; 何俊彦: Unit 12。

本书编写过程中参考了国内外大量报刊书籍，因篇幅所限，在此不便一一列出，并对所有的作者表示谢意！

由于时间仓促，加之编者水平有限，书中不当之处，还望读者批评指正。

编 者

2002 年 12 月

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Unit One

Text A Technology and Progress

Key Terms

unequivocal <i>adj.</i>	不含糊的；清楚的
gauge <i>n.</i>	计量器
credibility <i>n.</i>	可靠性；可信性
skeptical <i>adj.</i>	持怀疑态度的，不可信的
coincide <i>v.</i>	与同时发生；意见一致
diffusion <i>n.</i>	传播
fulcrum <i>n.</i>	支点
cumulative <i>adj.</i>	累积的，渐增的
to the fore	崭露头角
detach <i>v.</i>	分开
dissociation <i>n.</i>	与……分离；与……无关系
impoverishment <i>n.</i>	使穷困；除去优点
subtle <i>adj.</i>	微妙的
technocratic <i>adj.</i>	技术管理的
supplant <i>v.</i>	代替
obviate <i>v.</i>	消除，排除
incompatible <i>adj.</i>	矛盾的，性质相反的

Does improved technology mean progress? If some variant of this question had been addressed to a reliable sample of Americans at

any time since the early nineteenth century, the answer of a majority almost certainly would have been an unequivocal "yes". The idea that technological improvements are a primary basis for—and an accurate gauge of—progress has long been a fundamental belief in the United States. In the last half-century, however, that belief has lost some of its credibility. A growing minority of Americans has adopted a skeptical, even negative, view of technological innovation as an index of social progress. To chart this change in attitude, we need to go back at least as far as the first Industrial Revolution.

The development of radically improved machinery (based on mechanized motive power) used in the new factory system of the late eighteenth century coincided with the formulation and diffusion of the modern Enlightenment idea of history as a record of progress. This conception became the fulcrum of the dominant American worldview. It assumed that history, or at least modern history, was driven by the steady, cumulative, and inevitable expansion of human knowledge of and power over nature. The new scientific knowledge and technological power were expected to make possible a comprehensive improvement in all the conditions of life—social, political, moral, and intellectual as well as material.

It also assumed that a necessary criterion of progress was the achievement of political and social liberation. The new sciences and technologies were not regarded as ends in themselves, but as instruments for carrying out a comprehensive transformation of society.

With the further development of industrial capitalism, a quite different conception of technological progress gradually came to the fore in the United States. Americans celebrated the advance of science and technology with increasing fervor, but they began to detach the

idea from the goal of social and political liberation. Webster suggested the idea of progress had already been dissociated from the Enlightenment vision of political liberation.

This dissociation of technological and material advancement from the larger political version of progress was an intermediate stage in the eventual impoverishment of that radical eighteenth-century worldview. This subtle change prepared the way for the emergence, later in the century, of a thoroughly technocratic idea of progress. It was "technocratic" in that it valued improvements in power, efficiency, rationality as ends in themselves.

The initial Enlightenment belief in progress perceived science and technology to be in the service of liberation from political oppression. Over time that conception was transformed, or partly supplanted, by the now familiar view that innovations in science-based technologies are in themselves a sufficient and reliable basis for progress. The distinction, then, turns on the apparent loss of interest in, or unwillingness to name, the social ends for which the scientific and technological instruments of power are to be used. What we seem to have instead of a guiding political goal is a minimalist definition of civic obligation.

The distinction between two versions of the belief in progress helps sort out reactions to many troubling issues raised by the diffusion of high technology. When, for example, the introduction of some new labor-saving technology is proposed, it is useful to ask what the purpose of this new technology is. Only by questioning the assumption that innovation represents progress can we begin to judge its worth. The aim may well be to reduce labor costs, yet in our society the personal costs to the displaced workers are likely to be ignored.

Here I perhaps need to clarify the claim that it is the modern, technocratic worldview of Webster's intellectual heirs, not the Enlightenment view descended from the Jeffersonians, that encourages the more dangerous contemporary fantasies of domination and total control. The political and social aspirations of the generation of Benjamin Franklin and Thomas Jefferson provided tacit limits to, as well as ends for, the progressive vision of the future. But the technocratic version so popular today entails a belief in the worth of scientific and technological innovations as ends in themselves.

All of which is to say that we urgently need a set of political, social, and cultural goals comparable to those formulated at the beginning of the industrial era if we are to accurately assess the worth of new technologies. Only such goals can provide the criteria required to make rational and humane choice among alternative technologies and, more important, among alternative long-term policies.

Does improved technology mean progress? Yes, it certainly could mean just that. But only if we are willing and able to answer the next question: progress toward what? What is it that we want our new technologies to accomplish? What do we want beyond such immediate, limited goals as achieving efficiencies, decreasing financial costs, and eliminating the troubling human element from our workplaces? In the absence of answers to these questions, technological improvements may very well turn out to be incompatible with genuine, that is to say social, progress.

Exercises

1. Reading Comprehension

1) This text is primarily concerned with _____.

A. technological progress

- B. the Enlightenment belief in progress
 - C. the technocratic concept of progress
 - D. the evolution of the concept of progress
- 2) The author's attitude to the question "Does improved technology mean progress?" probably tends to be _____.
- A. positive
 - B. negative
 - C. objective
 - D. subjective
- 3) According to the Enlightenment belief, technological innovations _____.
- A. are only technological progress
 - B. are ends in themselves
 - C. are human progress
 - D. should be dissociated from the goal of social and political liberation
- 4) The technocratic idea regarded technological innovations as ____.
- A. an index of social progress
 - B. ends in themselves
 - C. instruments to change society
 - D. primary basis for progress / service of liberation from political oppression
- 5) The author tends to be in favor of _____.
- A. the Enlightenment belief in progress
 - B. the technocratic concept of progress
 - C. both A and B
 - D. neither A nor B
- 6) Which of the statements is TRUE according to the passage?
- A. The Americans hold the consistent idea that technological improvements are a primary basis for progress.
 - B. Improved technology means true progress.

- C. The technocratic view is more advanced than that of the Enlightenment.
- D. There are different perspectives of the relationship of technology to society.
- 7) When we assess the worth of new technologies, we should consider whether _____.
- A. they increase efficiencies
- B. they decrease financial costs
- C. they represent progress
- D. we've combined its technological progress and social progress
- 8) The example of the introduction of some new labor-saving technology is to prove that _____.
- A. different perspectives result in different reactions
- B. technological innovation presents progress
- C. the aim of the technology is to reduce labor costs
- D. we should not dissociate technological innovations from social goals
- 9) Among the following persons, who held the technocratic idea about technology?
- A. Jefferson
- B. Webster
- C. Franklin
- D. Jeffersonian
- 10) The immediate goals of new technologies are _____.
- A. achieving efficiencies
- B. decreasing financial costs
- C. eliminating the troubling human element from our workplaces
- D. all of the above

2. Structure & Vocabulary

- 1) Everyone says our team will win, but I am _____.

- 4) The distinction between two versions of the belief in progress helps sort out reactions to the many troubling issues raised by the diffusion of high technology.
- 5) In the absence of answers to these questions, technological improvements may very well turn out to be incompatible with genuine, that is to say social, progress.

5. Cloze

Early humans used natural resources to satisfy their ____ (1) for air, water, food, and ____ (2). These natural, unprocessed resources were readily available in the biosphere, and the residues generated by the use of such ____ (3) were generally compatible ____ (4), or readily assimilated by, the ____ (5). Primitive humans ate plant and animal foods without even disturbing the atmosphere with the ____ (6) from a campfire. Even when use of ____ (7) became common, the relatively small amounts of smoke generated were easily and rapidly dispersed and ____ (8) by the atmosphere.

Early civilizations often ____ (9) the same rivers in which they bathed and deposited their ____ (10), yet the impact of such use was relatively slight, as natural cleansing mechanisms easily restored water quality. These early ____ (11) used caves and other natural shelters or else fashioned their homes from wood, dirt, or animal skins. Often nomadic, early populations left behind ____ (12) items that were not readily broken down and absorbed by the ____ (13), hydrosphere, or lithosphere. And those items that were not broken down with time were so few in number and so innocuous as to present no significant solid waste problems.

Only as early peoples began to gather together in larger, more or