科技英语阅读教程

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主审：韩哲

A Reading Course of English for Science and Technology

外语教学与研究出版社
FOREIGN LANGUAGE TEACHING AND RESEARCH PRESS

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前　言

21世纪是一个高度信息化和国际化的时代。科学技术的迅猛发展，国际间日益增强的技术和文化交流，给我国高等院校英语专业本科教育带来了机遇和挑战。因此，我们必须对知识结构单一、内容陈旧的教学活动和教材进行改革，以拓宽学生的知识面、提高他们的综合素质。这是摆在我国外语教学界面前的一项迫在眉睫的任务。

《高等学校英语专业英语教学大纲》明确指出，我国21世纪高等学校英语人才应"在打好扎实的英语语言基本功和牢固掌握英语专业知识的前提下，拓宽人文学科知识和科技知识。""加强科学技术教育。……教材内容必须有较强的实用性和知识性。"《科技英语阅读教程》就是本着这个精神编写出来的。本书收集了共计32篇科普文章，内容涉及信息技术、环境保护、营养保健、医疗卫生、天文学、气象、纳米技术、汽车制造及能源等16个领域，从不同侧面反映出当代科学技术的飞速发展。读者在本书中可以读到有关2004年12月的印度洋海啸、2005年10月中国发射的"神舟六号"以及2006年冬世界各地发生禽流感的文章，也可以了解到有关艾滋病、纳米技术、互联网等最新的报道。

为了方便教学，本书每单元包括A、B两篇文章，前者适于精读，单词数在1,100—1,200之间，生词率为2%—3%；后者适于泛读，单词数在800—1,000之间，生词率为1.5%—2%。这样安排既符合教学大纲的要求，又能保证读者的阅读兴趣。本书的另一大特点是练习形式多样，针对性强。每单元都有30余道练习题，题型包括阅读理解、词义辨析及科技术语定义解释三大类。教师可根据具体情况有选择地指导学生练习。

在哈尔滨工业大学（威海）工作的美国文化和教育专家John Olson、加拿大文化和教育专家Wayne Charski及Lauri Charski教授审阅了全部书稿，在此深表谢忱。岳光帮忙整理了电子文稿，也对他一并表示谢意。

<div align="right">

韩　哲

2006年3月26日于威海

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CONTENTS

CONTENTS

Unit 1
Information Technology
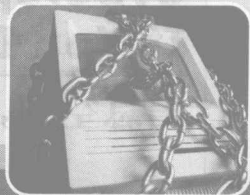
信息技术

Introduction

With the development of IT, the words "Internet" and "cyberspace" have been brought into contemporary English usage. Cyberspace generally refers to the Internet and the information contained on it. Useful information is easily accessible to any computer user via a modem and a server. Nowadays, many people are fascinated with cyberspace. Unfortunately, cyberspace also offers undesirable information and indecent pictures. Some websites even offer bomb-making instructions, pornography, advice on how to steal credit cards, gambling and other crimes, thus creating social problems. Therefore, some people believe cyberspace has become a nasty place. What should be done? Should it be strictly regulated by the government? Different people may have different answers to these questions. The article may let us know some opinions of the author.

Topics for Discussion

1. What do you know about the Internet?
2. What applications does the Internet have?
3. What are the problems caused by cyberspace?
4. How can we solve these problems?
5. What do you like or dislike about the Internet? Why?

1

Cyberspace:
If You Don't Love It, Leave It
信息空间，来去随意

by Esther Dyson

(1) Something in the American psyche loves new frontiers ①. We hanker after wide-open spaces; we like to explore; we like to make rules but refuse to follow them. But in this age, it's hard to find a place where you can go and be yourself without worrying about the neighbors.

(2) There is such a place: cyberspace. Formally a playground for computer fans, cyberspace now embraces every conceivable constituency: schoolchildren, flirtatious singles, Hungarian- Americans, accountants. Can they all get along? Or will our fear of kids surfing for dirty pictures behind their bedroom doors provoke a crackdown?

(3) The first order of business is to grasp what cyberspace is. It might help to leave behind metaphors of highways and frontiers and to think instead of real estate ②. Real estate, remember, is an intellectual, legal, artificial environment constructed on top of land. Real estate recognizes the difference between parkland and shopping mall, between red-light zone and school district, between church and drugstore.

(4) In the same way, you could think of cyberspace as a giant and unbounded world of virtual real estate. Some property is privately owned and rented out; other property is common land; some places are suitable for children, and others are best avoided by all citizens. Unfortunately, it's those places that are now capturing the popular imagination, places that offer bomb-making instructions, pornography, advice on how to steal credit cards. They make cyberspace sound like a nasty place. Good citizens jump to a conclusion: Better regulate it.

(5) But before using regulations to counter indecency, it is fundamental to interpret the nature of cyberspace. Cyberspace isn't a frontier where wicked people can grab unsuspecting children, nor is it a giant television system that can beam offensive messages at unwilling viewers. In this kind of real estate, users have to choose where they visit, what they see, what they do. It's optional. In other words, cyberspace is a voluntary destination—in reality, many destinations. You don't just get "onto the Net"; you have to go to some place in particular. That means that people can choose where to go and what to see. Yes, community

standards should be enforced, but those standards should be set by cyberspace communities themselves, not by the courts or by politicians in Washington. What makes cyberspace so alluring is precisely the way in which it's different from shopping malls, television, highways and other terrestrial jurisdictions. But let's define the territory:

(6) First, there are private email conversations, similar to the conversations you have over the telephone. These are private and consensual and require no regulation at all.

(7) Second, there are information and entertainment services, where people can download anything from legal texts and lists of "great new restaurants" to game software or dirty pictures. These places are like bookstores, malls and movie houses — places where you go to buy something. The customer needs to request an item or sign up for a subscription; stuff (especially pornography) is not sent out to people who don't ask for it. Some of these services are free or included as a part of a broader service like CompuServe or America Online [3]; others charge and may bill their customers directly.

(8) Third, there are "real" communities— groups of people who communicate among themselves. In real-estate terms, they're like bars or restaurants or bathhouses. Each active participant contributes to a general conversation, generally through posted messages. Other participants may simply listen or watch. Some services are supervised by a moderator; others are more like bulletin boards — anyone is free to post anything. Many of these services started out

unmoderated but are now imposing rules to keep out unwanted advertising, extraneous discussions or increasingly rude participants.

(9) Cyberspace communities evolve just in the way terrestrial communities do: people with like-minded interests band together. Every cyberspace community has its own character. Overall, the communities on CompuServe tend to be more professional; those on America Online, affluent young singles; Prodigy [4], family-oriented. Then there are independents like Echo [5], a hip, downtown New York service, or Women's Wire [6], targeted to women who want to avoid the male culture prevalent elsewhere on the Net. On the Internet itself there are lots of passionate non-commercial discussion groups on topics ranging from Hungarian politics to copyright law.

(10) What's unique about cyberspace is that it allows communities of any size and kind to flourish; in cyberspace, communities are chosen by the users, not forced on them by accidents of geography. This freedom gives the rules that preside in cyberspace a moral authority that rules in terrestrial environments don't have. Most people are stuck in the country of their birth, but if you don't like the rules of a cyberspace community, you can just sign off. Love it or leave it. Likewise, if parents don't like the rules of a given cyberspace community, they can restrict their children's access to it.

(11) What's likely to happen in cyberspace is the formation of new communities, free of the constraints that cause conflict on earth. Instead of global village, which is a nice dream but

impossible to manage, we'll have invented another world of self-contained communities that cater to their own members' inclinations without interfering with anyone else's. The possibility of a real market-style evolution of governance is at hand⑦. In cyberspace, we'll be able to test and evolve rules governing what needs to be governed—intellectual property, content and access control, rules about privacy and free speech. Some communities will allow anyone in; others will restrict access to members who qualify on one basis or another. Those communities that prove self-sustaining will prosper (and perhaps grow and split into subsets with ever-more particular interests and identities). Those can't survive—either because people lose interest or get scared off—will simply wither away.

(12) In the near future, explorers in cyberspace will need to get better at defining and identifying their communities. They will need to put in place—and accept—their own local governments apart from terrestrial governments, just as the owners of expensive real estate often have their own security guards though they can call in the police to get rid of undesirable customers.

(13) Then what should be done about undesirable material in cyberspace? What to do, for instance, about pornography? The answer is labeling,

besides banning, questionable material. It makes sense for cyberspace participants themselves to agree on a scheme for questionable items, so that people or automatic filters can avoid them. It's easy enough for software manufacturers to build an automatic filter that would prevent you or your child from ever seeing the undesired item on a menu. (It's as if all the items were wrapped, with labels on the wrapper.) Someone who posted pornographic material under the title "Kid-Fun®" could be sued for mislabeling.

(14) Without a lot of fanfare, private enterprises and local groups are already producing a variety of labeling services, along with kid-oriented sites like Kidlink® and Kids' Space®. People differ in their tastes and values and can find services on the Net that suit them in the same way they select books and magazines. Or they can wander freely if they prefer, making up their own itinerary.

(15) In the end, our society needs to grow up. Growing up means understanding that there are no perfect answers, no all-purpose solutions, no government-sanctioned safe havens. We haven't created a perfect society on earth, and we won't have one in cyberspace either. But at least we can have individual choice—and individual responsibility.

Vocabulary

psyche	(Para.1)	/ˈpsaɪkɪ/	n.	心灵
hanker	(Para.1)	/ˈhæŋkə(r)/	v.	渴望得到；追求
conceivable	(Para.2)	/kənˈsiːvəbl/	adj.	可以想象的
constituency	(Para.2)	/kənˈstɪtjʊənsɪ/	n.	（一批）支持者；（一批）顾客
flirtatious	(Para.2)	/flɜːˈteɪʃəs/	adj.	爱调情的
crackdown	(Para.2)	/ˈkrækdaʊn/	n.	镇压；制裁
cyberspace	(Para.3)	/ˈsaɪbəˌspeɪs/	n.	电脑空间；信息空间；网络空间
real estate	(Para.3)	/ˈrɪəl ɪˈsteɪt/	n.	房地产
indecency	(Para.5)	/ɪnˈdiːsənsɪ/	n.	不体面；下流（现象）
beam	(Para.5)	/biːm/	v.	发射；向指定方向传播
terrestrial	(Para.5)	/tɪˈrestrɪəl/	adj.	地上的；人间的；土地的
jurisdiction	(Para.5)	/ˌdʒʊərɪsˈdɪkʃən/	n.	管理；控制；司法权
consensual	(Para.6)	/kənˈsensjʊəl/	adj.	双方同意的；一致的
moderator	(Para.8)	/ˈmɒdəreɪtə(r)/	n.	调节器；仲裁人；缓和剂；减速器
unmoderated	(Para.8)	/ˌʌnˈmɒdəreɪtɪd/	adj.	未经调节的
extraneous	(Para.8)	/ekˈstreɪnjəs/	adj.	无关的；外部的；非必需的
affluent	(Para.9)	/ˈæfluənt/	adj.	富裕的
prodigy	(Para.9)	/ˈprɒdɪdʒɪ/	n.	天才；奇才
hip	(Para.9)	/hɪp/	adj.	时髦；赶时髦的人
constraint	(Para.11)	/kənˈstreɪnt/	n.	约束；束缚
governance	(Para.11)	/ˈgʌvənəns/	n.	支配；控制；管理
filter	(Para.13)	/ˈfɪltə(r)/	n.	漏斗；过滤器
			v.	过滤
fanfare	(Para.14)	/ˈfænfeə(r)/	n.	大吹大擂
itinerary	(Para.14)	/aɪˈtɪnərərɪ/	n.	行程；旅行计划
sanction	(Para.15)	/ˈsæŋkʃən/	v.	认可，批准
haven	(Para.15)	/ˈheɪvən/	n.	避风港；避难所

Notes

① Something in the American psyche loves new frontiers: 美国人骨子里酷爱探索新领域。句中的 frontiers(复) 在此处意为 "（探索活动的）新领域"。

② It might help to leave behind metaphors of highways and frontiers and to think instead of real estate: 或许我们可以抛开高速公路、新领域等比喻，把信息空间看作房地产。

③ Some of these ... America Online: 这其中有些服务是免费的或作为范围更广的收费服务的

一部分，像"计算机服务"和"美国在线"。其中，"计算机服务"和"美国在线"是美国的网络服务机构。

④ Prodigy: 奇才（网站名）

⑤ Echo: 共鸣（网站名）

⑥ Women's Wire: 妇女专线（网站名）

⑦ The possibility of a real market-style evolution of governance is at hand. 真正的市场化管理模式将很快形成。

⑧ Kid-Fun: 童趣（网站名）

⑨ Kidlink: 儿童连线（网站名）

⑩ Kids' Space: 儿童空间（网站名）

Exercises

Reading Comprehension

A. Decide on the best choice according to the passage.

1. According to the passage, cyberspace used to be a place _____.

   A) for sending email

   B) for playing games

   C) where information was found

   D) where scientific research was conducted

2. The reason why the author compares cyberspace to real estate is that she thinks _____.

   A) there are different cyberspace communities in it

   B) people can make telephone calls and do shopping in it

   C) people can see movies and have fun in it

   D) cyberspace consists of different parts and each of them suits a particular group of people, which is similar to real estate

3. Why does the author say cyberspace sounds like a nasty place?

   A) Because some property is privately owned and rented out.

   B) Because all citizens try to avoid it.

   C) Because indecency is offered and crime is induced in it.

   D) Because there is a strong temptation in it and children cannot resist it.

4. Some of the cyberspace communities will gradually die out because _____.

   A) they cannot keep themselves up

   B) they split into subsets

   C) they restrict access to their participants

   D) they allow all the people to join in

5. The author's attitude toward solving the problems concerning cyberspace is _____ .

    A) pessimistic   B) optimistic   C) neutral   D) worried

B. Answer the following questions.

1. Does the author approve of regulating cyberspace? Why or why not?

2. How do cyberspace communities evolve?

3. What is the most important difference between the rules in cyberspace and that in terrestrial environments?

4. What kind of government do participants in cyberspace need?

5. What can be done about pornography according to the author?

Vocabulary in Context

Choose the word or phrase which is closest in meaning to the underlined word or phrase in each of the following sentences.

1. The government restricts the number of foreign cars that could be imported.

    A) invigorates   B) limits   C) regulates   D) increases

2. The speaker made many extraneous remarks.

    A) irrelevant   B) essential   C) important   D) unimportant

3. Some breakthroughs have been made in the frontiers of medicine in China.

    A) border areas   B) products   C) new fields   D) scientific research

4. Humans have struggled to control the forces of nature and to create havens of comfort and security.

    A) refuge   B) heavens   C) means   D) plenty

5. They made an alluring advertisement in the newspaper for the new product.

    A) interesting   B) expensive   C) colorful   D) tempting

Term Definition

Match the terms in Column A with the definitions in Column B.

<table>
<tr><td>A</td><td>B</td></tr>
</table>

A	B
1. Internet	a. messages that computer users send to each other via a modem and a server on the Internet
2. surfing the Internet	b. treatment of obscene subjects, esp. sexual perversions, in writing, pictures, etc.
3. website	c. looking for information on the Internet
4. email	d. a network of computers through which people can get or exchange messages with a computer and a modem
5. cyberspace	e. the online world of computer networks, esp. the Internet
6. cyberspace community	f. individual sets of Web pages that can be visited with Web browsers.
7. real estate	g. land, including the buildings or improvements on it and its natural assets
8. pornography	h. a group of people with similar interests and tastes communicating among themselves on the Internet

Passage B

You've Got Spam
垃圾邮件

by Rich Stim

(1) Spam① is an Internet slang for unsolicited email, primarily unsolicited commercial email (UCE). The use of the term"spam" (a trade-marked Hormel meat product) is supposedly derived from a Monty Python sketch② in which Spam is included in every dish offered at a restaurant. Recipients of spam often consider it to be an unwanted intrusion in their mailbox. Internet Service Providers (ISPs), such as America Online, consider spam to be a financial drain and an impediment to Internet access because it can clog an ISP's available bandwidth.

(2) Not all bulk is spam. Some is permission-based, meaning that the recipient has asked to receive it. This occurs when a user at a website voluntarily agrees—for example, at the time of making a purchase—to receive email or a newsletter (known as "opt-in email").

(3) Spam is rarely sent directly by an advertiser. It's usually sent by a "spammer", a company in the business of distributing unsolicited email. An advertiser enters into an agreement with a spammer who generates email advertisements to a group of unsuspecting recipients.

(4) How do spammers find you? Recipient addresses are often obtained by using software programs known as "harvesters" that pluck names from websites, newsgroups or other services in which users identify themselves by email address.

(5) To protect against harvesters of email addresses, some websites use software that "poisons" the harvester—for example, generating bogus email addresses of directing the harvester to a nonexistent site.

(6) Defenders of spam claim that it is little different from junk mail and can, in fact, be tossed more easily: simply hit the Delete key. While there is some truth to this position, receiving spam is actually more like receiving a junk fax or sales call on a cellular phone because the cost of distributing the advertisement is borne by the recipient (for the recipient's ISP), not the sender. This means, unlike direct mailers, who eventually stop if few people respond, spammers who get even a tiny return are motivated to spam forever.

(7) Every ISP pays for the right to operate on the Net by purchasing bandwidth, the "space" it uses to transmit over the Internet. As the volume of spam directed through an ISP increases, the bandwidth becomes crowded, often slowing down the user's Internet access.

To counter this, the ISP must pay for filtering software (which can also slow access) or pay to increase the amount of bandwidth.

(8) Since most legitimate businesses recognize the public's strong anti-spam sentiment, they avoid using it. You've probably noticed that much of the spam you receive involves deceptive practices. For example, spam for X-rated sites may be disguised with a personal subject header ("How come you didn't write back?" or "Here is my new email address") or even as anti-spam ("We Can Help Remove You From Spam Lists!"). And you're surely aware that most of the spam that comes in your way is attempting to perpetuate some sort of scam—pyramid schemes, bogus stock offerings, pirated software and quack health remedies.

(9) Besides the annoyance and cost of spam, it makes the Web harder and less pleasant to use for all of us. For one, spam can affect access to legitimate email because it can overflow a user's mailbox, especially in cases where email is not reviewed for a period of days. And for Internet newbies, unaware of the nuances of email, spam can be a confusing and off-putting hurdle in the struggle to communicate online.

(10) Avoiding spam can be a time-consuming and sometimes futile battle. Some ISPs allow users to block incoming email from unknown sources, something that can, unfortunately, also block legitimate messages. Anti-spam

groups sometimes suggest replying to spam with a stern message requesting removal from spam lists. This option proves futile if spammers, who often use a dummy return address or supply false information in registering its domain name, are not dissuaded. Sometimes dummy return addresses are even used to collect additional email addresses from disgruntled spam recipients.

(11) The most effective deterrent against spam has been slow in coming—anti-spam legislation. Despite the fact that there have long been law prohibiting junk faxes and unsolicited commercial calls to cell phones (the Federal Telephone Consumer Protection Act of 1991), there is currently no federal anti-spam act. Proposed legislation generally falls into two categories: tough anti-spam laws, favored by Internet privacy groups, that allow ISPs to sue spammers and provide criminal penalties for some deceptive practices; or "opt-out" legislation, favored by spammers, that allows recipients to elect to be removed from junk email lists. Opt-out legislation had been criticized because it permits a spammer to have a first unblocked mailing and requires the recipient to take affirmative action to avoid future mailings. If opt-out junk mail laws (for postal junk mail) are any example, similar requirements for spam may not be too effective.