研究生英语系列教材
GRADUATE ENGLISH SERIES

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A Course of Integrated English

Advanced Teacher's Book

研究生英语综合教程

高级本

教师用书

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Http://www.cqup.com.cn

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内 容 提 要

《研究生英语综合教程(高级本)教师用书》为求新研究生英语系列教材中《研究生英语综合教程(高级本)》的教师参考书。主要内容包括听力原文,阅读课文中语言难点的解析和课后练习的参考答案,是对学生用书的一种补充和延伸,为教师更好地理解、使用教材提供了参考。

图书在版编目(CIP)数据

研究生英语综合教程(高级本)教师用书/黎宏,兰萍主编. —重庆:重庆大学出版社,2005.9
(求新研究生英语系列教材)
ISBN 7-5624-3498-0

Ⅰ.研… Ⅱ.①黎…②兰… Ⅲ.英语—研究生—教学参考资料 Ⅳ.H31

中国版本图书馆 CIP 数据核字(2005)第 093859 号

求新研究生英语系列教材
研究生英语综合教程(高级本)
教师用书
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责任编辑:韩 杰 版式设计:谈文艳
责任校对:方 正 责任印制:赵 晟
*
重庆大学出版社出版发行
出版人:张鸽盛
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邮箱:fxk@cqup.com.cn (市场营销部)
全国新华书店经销
重庆现代彩色书报印务有限公司印刷
*
开本:787×960 1/16 印张:12.5 字数:210 千
2005 年 9 月第 1 版 2006 年 9 月第 2 次印刷
印数:2 001—3 000
ISBN 7-5624-3498-0 定价:26.00 元(含光盘)

前 言

《求新研究生英语系列教材》自2003年问世以来，受到了广大师生的青睐，被许多高校选用，用书师生纷纷反映该系列教材在编写理念、材料选取以及体例编排上都有独到之处，充分反映了研究生英语实用能力提高的需要。但随着全国高校研究生教学的改革，许多高校研究生教育学制缩短，各高校对研究生英语教学的学时数、课程设置等方面都进行了相应的调整，针对研究生英语教学改革的实际，重庆大学出版社在充分调研和广泛收集教材使用学校意见的基础上，组织重庆大学、四川大学、西南交通大学、西安交通大学、华南理工大学、武汉大学、华中科技大学、中山大学八所院校系列教材编写的教师经过反复的研讨，对系列教材进行了修订。

为了使《研究生英语综合教程》能够更好地服务于研究生英语教学，达到教学大纲的相关要求，我们根据修订后的《研究生英语综合教程》，对教师用书作了相应的修改。修订后的教师用书内容包括：

1. Sound Lab 部分的录音文字材料

2. Bookshelf 部分的文化背景知识（Cultural Tips and Hints）

3. Bookshelf 部分的课文难点解析（Language Points）

对课文中的语言难点、习惯用法等做了必要的解释和说明。全部采用英语注释，以帮助学生更好地理解课文。

4. Bookshelf 部分的课文翻译

5. 练习答案

对每个单元的所有练习均提供了答案。部分练习的答案是开放式的，我们只提供一条答案作参考，教师可根据教学实际灵活使用。

鉴于编者水平和时间因素，书中难免有疏漏和错误，恳请广大专家和读者批评指正。

CONTENTS

UNIT 1 NEW KNOWLEDGE

Tapescripts

All the knowledge has two dimensions, according to Seely Brown. The first is what he called explicit knowledge, which he said "lives in documents and heads". The second is tacit knowledge, or plain know-how, which resides in people and their practices.

Those two dimensions may seem obvious. But the way the two can interact or work in parallel is fascinating, he said. It is "quite impossible", for instance, to convert the tacit into the explicit, he continued, offering the example of riding a bike to illustrate what he called "the rich interplay" between tacit and explicit forms of knowledge. Anyone who has tried riding a bike next to a right-hand curb, he said, knows that the curb acts almost with magnetic force when the rider tries to steer away from it.

"When you pull away you actually steer in to go left" though that is not what your brain would instruct you to do, said Seely Brown. "It is an interesting example of the rich interplay between the tacit and the explicit. Think about that in organizations, in our ability to actually speculate on dimension in the social mind of the organization, too", he continued.

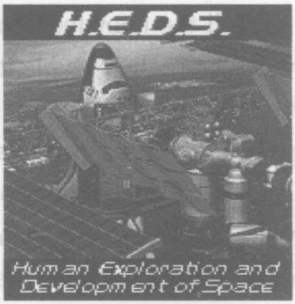
Fluency on the court — and in the community of practice. A successful and effective community of practice is like an outstanding basketball team, according to Seely Brown. People work closely together over a long period of time start to invent own language and develop an ability to read each other instantly. They can

count on each to improvise in a coherent way to take advantage of each moment.

What we are really suggesting, though — the plus and minus — is that a community of practice creates a boundary in which knowledge flows inside that boundary with spectacular speed. But as it flows spectacularly fast inside that boundary, it also sticks and does not move outside boundary very easily.

Cultural Tips and Hints

1. NASA's Human Exploration and Development of Space (HEDS) Enterprise

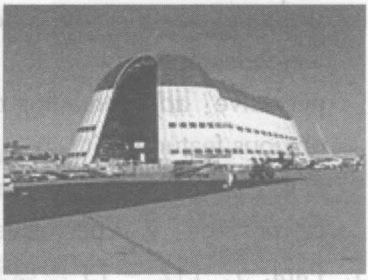


As one of NASA's enterprises, HEDS includes the International Space Station, Space Shuttle, and Life and Microgravity research. It seeks to bring the frontier of space fully within the sphere of human activity for research, commerce, and exploration. The following are goals of the HEDS Enterprise: 1) Increase human knowledge of nature's processes using the space environment. 2) Explore and settle the solar system. 3) Achieve routine space travel. 4) Enrich life on Earth through people living and working in space.

The NASA Centers' primary missions to support the HEDS Enterprise are listed in the table below.

Center	Mission
Ames Research Center	Astrobiology
Johnson Space Center	Human Exploration and Astro Materials
Kennedy Space Center	Space Launch
Marshall Space Flight Center	Space Transportation Systems and Microgravity Research
Stennis Space Center	Rocket Propulsion Testing

2. **Ames Research Center**



NASA Ames Research Center, located at Moffett Field, California, was founded Dec. 20, 1939 as an aircraft research laboratory by the Nationmal Advisory Committee for Aeronautics (NACA) and in 1958 it became part of the National Aeronautics and Space Administration (NASA). Ames Research Center, one of 10 NASA field installations, is located in the heart of California's Silicon Valley at the core of the research cluster of high-tech companies, universities and laboratories that define the region's character. With over $3.0 billion in capital equipment, 4,000 research personnel and a $775 million annual budget, Ames' economic impact is significant. Ames plays a critical role in virtually all NASA missions in support of America's space and aeronautics programs.

Language Points

New Knowledge of Human Exploration and Development of Space

1. Para.1, L7 – 8 "*This objective embraces the quest for knowledge of ...*": this aim includes the pursuit for knowledge of... .

embrace: *v.*

1) (mainly literary) to put your arms around someone to show love or friendship; to hug

e.g.: She embraced her baby tenderly.

2) 〈*formal*〉 to include something

e.g.: The study embraces all aspects of the population problem.

2. Para. 3, L2 – 3 "*... the most commonly experienced, pervasive effects of weightlessness*": *the most commonly experienced, obvious effects of weightlessness.*

   pervasive: *adj.* spreading through the whole of something and becoming a very obvious feature of it

   e. g. : the pervasive influence of Christianity in the Middle Ages

   cf: pervade: *v.* pervasively: *adv.* pervasiveness: *n.* [U]

3. Para. 5, L12 – 13 " *... in terms of the cardiovascular systems and ICP changes.*": ...concerning the cardiovascular systems and ICP changes.

   in terms of: with regard to; concerning

   e. g. : The savings, both in terms of time and money, could be considerable.

4. Para. 7, L3 "*Fiscal year 97 has seen the culmination of...*": Fiscal year 97 has experienced the peak of...

   see: *v.* (never progressive) to experience something (if a place or a period of time sees an event, the event happens in that place or during that time)

   e. g. : The region has seen some of the fiercest fighting in the war.

5. Para. 7, L6 "*This suite of facilities,...*": this set of facilities,...

   suite: *n.* [C]

   1) a set of rooms

      e. g. : the hotel's honeymoon suite

   2) a set of products

      e. g. : a fully integrated suite of training packages

6. Para. 8, L3 – 4 " *New materials and techniques were examined that hold significant promise in...*": New materials and techniques that have a significant prospect in...were examined.

   promise: *n.* [U] signs that someone or something is likely to be successful in the future

   e. g. : Life was hopeful and full of promise.

   hold promise:

   e. g. : This technology holds considerable promise for improving inner city living

conditions.

show promise:

e.g.: He shows great promise as an interpreter.

Translation of the Passage

人类探索和开发太空的新知识

人类太空探索与发展计划将太空领域完全纳入人类活动的范畴之内。埃姆斯研究中心通过开展研究、实施航天项目以及发展先进技术来支持这项计划。这些尝试的一个目的是为了获取关于一些物理化学和生物学现象的知识,而这些现象只能在重力很小的情况下才能得到全面的研究。这个目的还包括认识重力在生物系统中的作用和重力对生物系统中的影响——这是人类太空探索与发展计划中天体生物学研究活动中的一个项目。第二个目的是开发能够加快人类太空探索和实现常规太空旅行常规化的技术。一个次要目的是利用在实现这些目的过程中所得到的知识来尽量地丰富人类的生活。与人类太空探索与发展计划目标相符的重要研究和技术尝试已经完成。

人们通过两个途径获得新的知识和不断深入地认识自然界中重力对生物系统影响的相关过程:(1)在不同的重力程度范围内并用各种各样的生物样本进行研究;(2)为支持在地面和太空中的生命科学研究研发专业设备和先进的技术。然后,将获得的知识通过信息技术整合并传播开来。科学家们有了这类知识后就能够帮助确保人类在不断延长的太空逗留期间的旅行安全而且有助于对这个星球生命的理解。

航天科学家们为了搞清楚两个最常见和最普遍的失重作用的某个和某些原因已经工作了:太空运动疾病和飞行后过敏的来源。以前的研究指出,大多数宇航员在失重状态头几天所经受的头痛、恶心、呕吐以及回到地球后无法站立是体液流向大脑的结果。最近有两项研究侧重于这个受人关注的领域。这两项研究加深了对体液流动后果的了解,并且有助于采取相应对策来减轻体液流动的影响的方法向着正确的方向发展。

最近的研究显示,由于心血管代偿失调引起的体液流动增加了颅骨内压力。这

种增加的颅压促成了运动疾病。这种运动疾病直接影响宇航员在太空中关键时期的表现,而且还可能造成重新适应的结果。通过用埃姆斯研发的非扩散性超声波测量装置和现有测试颅压的扩散性方法的对比,证明了这种仪器的灵敏度和精确性。这种方法将使科学家们能探究颅压和在太空中出现的生理学症状之间的联系。有了这种新知识,科学家们可以不断完善宇航员用于减轻各种不适的办法。在医学界,这种装置还有另一种很大的潜能,它可以用来诊断脑外伤病人的损伤程度。

因为颅压的变化在太空和地球对健康都有很大的影响,所以了解心血管潜在的适应性结构至关重要。埃姆斯的生命科学家用不同进化背景的蛇类作了重力耐性的对比研究。长长的体形和大不相同的行为生态使生活在树丛和水中的蛇成为研究在变更的结构中颅压调节的敏感样本。因此,生活在树丛中的蛇类可能是研究对重力适应性长期效果的合适的物种,而生活在水中的蛇类则提供了一个在心血管系统和颅压变化条件下对失重状态适应的迥然不同的范例。

开发出一种能在奇特、狭小但运动自如的航天器微重力环境中运行的设备的确是一种挑战。

尽管任务艰巨,埃姆斯近来已在最短的时间内研发出最复杂的太空实验室。在1997财政年度,人们付出巨大的努力去完成了对现有设施的重大改造,同时也完成了对专用硬件的开发以满足神经实验室研究的需要。这套设施,与众多神经病学现象的创新性研究相结合,将使这项国际间合作的研究工作能完美地结束被称为"头脑十年"的研究期。

人类太空探索与发展计划的目标是实现定期空间飞行来探测太阳系。作为这个目标的一部分,埃姆斯继续探寻维持生命的方法。新的材料和技术受到测试。这些材料和技术极有可能减少由于再次释放污染物所带来的潜在危险。这种危险存在于由于轨道上湿度的变化在大气重建过程中。对这个问题解决方法的调查带来了一种大气采样的新方法,它能从行星探测器上收集更多的数据。

所有这些贡献对于确保一个成功的太空时代是十分重要的。在这些时代将有希望产生一个遥远的人类定居点,然后出现人类在地球之外的永久居住地。这些各具特点的贡献来源于先辈的发现,必将带来人们认识上的巨大飞跃。它们也是人们探索的方法和手段。

Key to Exercises

Quick Flash

Group Your Words

optical computers, electronic commerce, firewall, artificial neural network, plasma generator digital camera

Sound Lab

Listen and Complete

I.

1. dimensions
2. obvious
3. to convert the tacit into the explicit
4. knowledge flows inside that boundary with spectacular speed
5. sticks and does not move outside boundary very easily

II.

1. explicit knowledge
2. tacit knowledge, plain knowledge
3. riding a bike
4. the rich interplay between the tacit and the explicit
5. outstanding basketball team

Bookshelf

Silent Reading

—— New knowledge is different from the traditional knowledge. It has been invented or created in the latest centuries.
—— More than several hundred types so far as I know.
—— More new knowledge will appear.

Passage

1. Seeking knowledge of physicochemical and biological phenomena and developing technologies for advancing human exploration of space and achieving routine space travel.
2. Yes. Scientists can help to ensure the safe travel of humans in space for extended duration and contributes to the understanding of life on this planet.
3. No.
4. Increases intracranial pressure.
5. Understanding the mechanisms underlying cardio-vascular adaptation.
6. Yes.

Global Understanding

1. F 2. F 3. T 4. T 5. T 6. T 7. F 8. F

In-depth Understanding

1. New knowledge and an increase in the understanding of nature's processes
2. Specialized equipment and advanced technologies