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新编 工程硕士研究生 英语教程

主 编 吴书祉 李崇月 董永生
副主编 朱 哲 何明丽 陈海忠

(上册)



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前言

光阴荏苒,自1997年全国首次招收工程硕士生至今,已有十年了。在这十年中,工程硕士的招生规模有了很大的扩展,工程硕士的培养也更加规范化,教育质量不断提升。工程硕士已成为具有实践工作经验的工程师们提升学历、更新知识的重要途径。在工程硕士的培养过程中,英语始终是一门重要课程,它成为工程师们与世界最前沿科技之间的纽带,发挥着巨大的作用。

近年来由于对英语教学的重视,学生的英语水平不断提高,我们越来越感到工程硕士英语教学的起点应该相应提高,越来越感到需要一本适合新形势的英语教材。因此,王松年教授和南大出版社会同我省七所重点大学研究生英语教学第一线的教师一起编写了这本教材。

这本教材共分上下两册,每册有十个单元。每单元由课文A和课文B两个部分组成。课文的篇幅比以往的教材有所增加,所选文章都是英美作者的原作。题材涉及自然科学和社会科学的诸多方面,如语言学、生物学、社会学、教育学、技术、经济与管理、公共卫生、环境科学等。选材时我们力求信息量大,趣味性强,有思想深度,能激发读者的思索。在课文后我们设计了一些练习,帮助学生掌握一些有用的词汇,理解作者的思想观点,引导学生对作者的观点进行思考讨论。除此之外我们在上册增加了翻译技巧介绍以及相应练习,在下册增加了写作专项训练。

我们希望这本教材的问世将给学生的英语学习增添动力,为英语教学的课堂增添光彩。

在编写过程中王松年教授付出了大量心血。未及教材付印,王教授不幸逝世。这本教材的出版也是对王教授辛勤工作的最好的缅怀。同时南大出版社的杨金荣和董颖老师也进行了大量的协调工作,在此我们深表感谢。

由于作者水平有限和时间仓促,此书错误在所难免,希望广大读者指正。

编者

2006年2月

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Unit One

Text A

Universities And Their Functions¹

Alfred North Whitehead²

What are universities and their functions? Are they simply places of imparting knowledge to students or offering opportunities to faculty members for research? How important is the role of imagination in university education in the preparation for an intellectual career? Read on to find Whitehead's philosophical thinking considering these and other questions.

1 ➤ The universities are schools of education, and schools of research. But the primary reason for their existence is not to be found either in the mere knowledge conveyed to the students or in the mere opportunities for research afforded to the members of the faculty.

2 ➤ The justification for a university is that it preserves the connection between knowledge and the zest of life, by uniting the young and the old in the imaginative consideration of learning. The university imparts information, but it imparts it imaginatively. At least, this is the function which it should perform for society. A university which fails in this respect has no reason for existence. This atmosphere of excitement, arising from imaginative consideration, transforms knowledge. A fact is no longer a bare fact; it is invested with all its possibilities. It is no longer a burden on the memory; it is energizing as the poet of our dreams, and as the architect of our purposes.

3 ➤ Imagination is not to be divorced from the facts; it is a way of illuminating the facts. It works by eliciting the general principles which apply to the facts, as they exist, and then by an intellectual survey of alternative possibilities which are consistent with those principles. It enables men to construct an intellectual vision of a new world, and it preserves the zest of life by the suggestion of satisfying

purposes.

☛ Youth is imaginative, and if the imagination be strengthened by discipline this energy of imagination can in great measure be preserved through life. The tragedy of the world is that those who are imaginative have but slight experience, and those who are experienced have feeble imaginations. Fools act on imagination without knowledge; pedants act on knowledge without imagination. The task of a university is to weld together imagination and experience.

☛ These reflections upon the general functions of a university can be at once translated in terms of the particular functions of a business school. We need not flinch from the assertion that the main function of such a school is to produce men with a greater zest for business. It is a libel upon human nature³ to conceive that zest for life is the product of pedestrian purposes directed toward the narrow routine of material comforts.⁴ Mankind by its pioneering instinct, and in a hundred other ways, proclaims the falsehood of that lie.

☛ In the modern complex social organism, the adventure of life cannot be disjoined from intellectual adventure. Amid simpler circumstances, the pioneer can follow the urge of his instinct, directed toward the scene of his vision from the mountain top. But in the complex organisations of modern business the intellectual adventure of analysis, and of imaginative reconstruction, must precede any successful reorganisation.

☛ In a simpler world, business relations were simpler, being based on the immediate contact of man with man and on immediate confrontation with all relevant material circumstances. Today business organisation requires an imaginative grasp of the psychologies of populations engaged in differing modes of occupation; of populations scattered through cities, through mountains, through plains; of populations on the ocean, and of populations in mines, and of populations in forests. It requires an imaginative grasp of conditions in the tropics, and of conditions in temperate zones. It requires an imaginative grasp of the interlocking interests of great organisations, and of the reactions of the whole complex to any change in one of its elements. It requires an imaginative understanding of laws of political economy, not merely in the abstract, but also with the power to construe them in terms of the particular circumstances of a concrete business. It requires some knowledge of the habits of government, and of the variations of those habits under diverse conditions. It requires an imaginative vision of the

binding forces of any human organisation, a sympathetic vision of the limits of human nature and of the conditions which evoke loyalty of service. It requires some knowledge of the laws of health, and of the laws of fatigue, and of the conditions for sustained reliability. It requires an imaginative understanding of the social effects of the conditions of factories. It requires a sufficient conception of the role of applied science in modern society. It requires that discipline of character which can say "yes" and "no" to other men, not by reason of blind obstinacy, but with firmness derived from a conscious evaluation of relevant alternatives.

➡ The universities have trained the intellectual pioneers of our civilisation—the priests, the lawyers, the statesmen, the doctors, the men of science, and the men of letters. The conduct of business now requires intellectual imagination of the same type as that which in former times has mainly passed into those other occupations; and the universities are the organisations which have supplied this type of mentality for the service of the progress of the European races.

➡ In early mediaeval history the origin of universities was obscure and almost unnoticed. They were a gradual and natural growth. But their existence is the reason for the sustained, rapid progressiveness of European life in so many fields of activity. By their agency the adventure of action met the adventure of thought.

➡ There is one great difficulty which hampers all the higher types of human endeavour. In modern times this difficulty has even increased in its possibilities for evil. In any large organisation the younger men, who are novices, must be set to jobs which consist in carrying out fixed duties in obedience to orders. No president of a large corporation meets his youngest employee at his office door with the offer of the most responsible job which the work of that corporation includes. The young men are set to work at a fixed routine, and only occasionally even see the president as he passes in and out of the building. Such work is a great discipline. It imparts knowledge, and it produces reliability of character; also it is the only work for which the young men, in that novice stage, are fit, and it is the work for which they are hired. There can be no criticism of the custom, but there may be an unfortunate effect—prolonged routine work dulls the imagination.

➡ The way in which a university should function in the preparation for an intellectual career, such as modern business or one of the older professions, is by promoting the imaginative consideration of the various general principles underlying that career. Its students thus pass into their period of technical apprenticeship

with their imaginations already practised in connecting details with general principles. The routine then receives its meaning, and also illuminates the principles which give it that meaning. Hence, instead of a drudgery issuing in a blind rule of thumb, the properly trained man has some hope of obtaining an imagination disciplined by detailed facts and by necessary habits.

12 Thus the proper function of a university is the imaginative acquisition of knowledge. Apart from this importance of the imagination, there is no reason why business men, and other professional men, should not pick up their facts bit by bit as they want them for particular occasions. A university is imaginative or it is nothing—at least nothing useful.

(1200 words)

Notes

1. This is a speech first addressed to the American Association of the Collegiate Schools of Business, 1927. The text selected here is adapted from *The Aims of Education and Other Essays*, New York: Free Press, 1967.
2. Alfred North Whitehead: (1861–1947), British mathematician, logician and philosopher best known for his work in mathematical logic and the philosophy of science (In collaboration with Bertrand Russell, he authored the landmark three-volume *Principia Mathematica* and contributed significantly to twentieth-century logic and metaphysics.)
3. a libel upon human nature: an unfair or untrue description of, or a calumny against characteristics and feelings common to all people
4. pedestrian purposes directed toward the narrow routine of material comforts: worldly purposes aimed at the narrow routine—material comforts

New Words and Expressions

justification	/ˌdʒʌstɪfɪˈkeɪʃn/ n.	acceptable reason (for doing sth.) 正当理由
zest	/zest/ n.	great enjoyment or excitement 极大的快乐或兴奋; 热情; 兴趣
imaginative	/ɪˈmædʒənətɪv/ adj.	having or showing imagination 富于想象力的
impart	/ɪmˈpɑːt/ v.	give (qualities, knowledge, etc.) 传授; 赋予; 告知
energize	/ˈenədʒaɪz/ v.	give energy to 给予精力、能量

illuminate	/ɪˈluːmineɪt/ <i>v.</i>	1. make sth. clear; help to explain 阐明; 解释清楚;启发 2. provide sth. with light 照明;照亮;照射
elicit	/ɪˈlɪsɪt/ <i>v.</i>	get or draw out, cause to come out (facts, information, etc.)引出;诱出;探出
feeble	/ˈfiːbl/ <i>adj.</i>	weak; faint 衰弱的;虚弱的;微弱的
pedant	/ˈpednt/ <i>n.</i>	a person who attaches too much importance to detail or rules, esp. when learning or teaching 学究;书呆子
flinch	/flɪntʃ/ <i>v.</i>	avoid thinking about or doing sth. unpleasant 不想或不做某种不愉快的事
assertion	/əˈseɪʃn/ <i>n.</i>	strong statement claiming the truth of sth. 强硬陈词;断言
libel	/ˈlaɪbl/ <i>n.</i>	an unfair or untrue remark about or description of 作不公平或不真实评价;诽谤;中伤
conceive	/kənˈsiːv/ <i>v.</i>	think of; imagine; consider 构思;想象;设想
pedestrian	/prɪˈdestriən/ <i>adj.</i>	dull; lacking imagination or inspiration 平淡的;缺乏想象或灵感的
falsehood	/ˈfɔːlshud/ <i>n.</i>	untrue statement; lie 不实之辞;谎言
disjoin	/dɪsˈdʒɔɪn/ <i>v.</i>	separate; or become separated (使)分离
precede	/priˈsiːd/ <i>v.</i>	come or go before sth. in time, order, rank, etc. 在……之前;先于
temperate	/ˈtempərɪt/ <i>adj.</i>	(of climate or climatic regions) having a mild temperature without extremes of heat or cold (指气候或某种气候的地区)温和的
interlocking	/ɪntəˈlɒkɪŋ/ <i>adj.</i>	firmly joined together, esp. by one fitting into another 交织的;连锁的
complex	/ˈkɒmpleks/ <i>n.</i>	group of connected or similar things 相联或相似的综合物
construe	/kənˈstruː/ <i>v.</i>	explain the meaning of (words, sentences, actions, etc.); interpret sth. 解释(词语,句子,行为等)意义;理解

binding	/ˈbaɪndɪŋ/ <i>adj.</i>	that must be obeyed 应遵守的
evoke	/ɪˈvəʊk/ <i>v.</i>	produce or cause (a response, reaction, etc.) 产生或引起
conception	/kənˈsepʃən/ <i>n.</i>	a general understanding; idea 概念; 观念; 理解
obstinacy	/ˈɒbstɪnəsi/ <i>n.</i>	being obstinate; stubbornness 固执; 倔强; 顽固
statesman	/ˈsteɪtsmən/ <i>n.</i>	a political or government leader, esp. one who is wise and fair minded 政治家(尤指贤明公正的)
mentality	/ˌmenˈtæləti/ <i>n.</i>	character; habits of thought 个性; 思想习惯
mediaeval (= medieval)	/ˌmedɪˈiːvl/ <i>adj.</i>	of the Middle Ages, about A.D. 1100—1400 中古的; 中世纪的(约公元 1100—1400 年)
obscure	/əbˈskjʊə/ <i>adj.</i>	not clear; hard to understand 不清楚的; 难解的
hamper	/ˈhæmpə/ <i>v.</i>	prevent the free movement or activity of sb.; hinder sb. /sth. 束缚某人; 妨碍某人 / 某物
endeavor	/ɪnˈdevə/ <i>n.</i>	attempt or effort 努力; 尽力
novice	/ˈnɒvɪs/ <i>n.</i>	a person who is new and inexperienced in a job, situation, etc.; beginner 新手; 生手; 初学者
obedience	/əˈbiːdiəns/ <i>n.</i>	action of obeying; being obedient 服从; 顺从; 听话
prolong	/prəˈlɒŋ/ <i>v.</i>	make sth. longer, esp. in time; extend 延长; 使延伸
prolonged	<i>adj.</i>	continuing for a long time 持续很久的; 长时间的
underlie	/ˌʌndəˈlaɪ/ <i>v.</i>	1. lie or exist beneath sth. 位于或存在于 (某物) 之下 2. form the basis of (sb.'s actions, a theory, etc.); account for 构成 (某人行动、某一理论等) 的基础; 作 (某事物) 的说明或解释
apprenticeship	/əˈprentɪʃɪp/ <i>n.</i>	(time of) being an apprentice 学徒身份

drudgery	/ˈdrʌdʒəri/ n.	(期限)
invest with		hard, boring work 繁重、乏味的工作
		cause sb. /sth. to have a quality 赋予某人
		/某物某种性质
in great measure		to a great extent 在很大程度上
in terms of		as regards; expressed as 在……方面; 以
		……来表达
by reason of		because of 因为; 由于
rule of thumb		quick and not exact way of doing sth. ,
		learnt by practical experience 快速而粗略
		的做法; 根据经验的做法

Questions for Comprehension

1. What is the primary reason for the existence of universities?
2. Why is it that imagination is of great importance in the consideration of learning?
3. How is the adventure of action met with the adventure of thought?
4. What is the difficulty that hampers all the higher types of human endeavour? And what is the likely result?
5. What is the way in which a university should function in the preparation for an intellectual career?

Vocabulary and Structure Exercises

I. Complete the following sentences with words or phrases from the text.

1. Critics can also be _____ a degree of respect deriving partly from their academic connections. (Para. 2)
2. The first objective of higher education should be to _____ the skills and attributes which will allow for active participation in employment. (Para. 2)
3. California's wine-making success are the states of Washington, Oregon and even New York, where _____ climates have resulted in some very elegant wines. (Para. 7)
4. Insufficient blood flow to your skin can _____ your body's ability to regulate temperature. (Para. 10)
5. We can assure you that we will make every _____ to tailor our service to meet your individual requirements. (Para. 10)
6. The difficulties most of us have with visionary literature are related to how we

_____ reality in the first place, and that is to a considerable extent culturally determined. (Para. 7)

7. The names alone _____ images of golden temples and dynastic glories, emerald rice paddies and floating markets. (Para. 7)
8. The lights of the boat create a shimmering veil over the wake and momentarily _____ couples on the quays, interrupting their embraces. (Para. 3)
9. Amongst those teaching management and business, fewer than one in ten had worked in the private sector for a _____ period since starting in academia. (Para. 10)
10. As the oldest daughter in a family of nine children, her life was an exhausting round of _____ between responsibilities at the store and the grueling housework. (Para. 11)

II. Replace the italicized parts in the following sentences with words or phrases from the text that best keep the original meanings.

1. There is absolutely no *reason* or excuse for their engagement in violence. (Para. 2)
2. The applicant was employed by a company from 1959 to 1987 until she was dismissed *because of* redundancy when she was a few months over 60. (Para. 7)
3. While she was still a *green hand*, Stephen insisted that her daily rides should be accompanied by a groom. (Para. 10)
4. The questionnaire was intended to *obtain* information on eating habits. (Para. 3)
5. He *thinks* of society as a jungle where only the fittest survive. (Para. 5)
6. These are people who would *not be willing to harm* innocent children. (Para. 5)
7. These repeated *claims* that AIDS cannot be transmitted heterosexually are false. (Para. 5)
8. His success was, *to a great extent*, due to his being in the right place at the right time. (Para. 4)
9. A 200-year-old building is very old *as regards* American history. (Para. 5)
10. *Taking action in accordance with* information received, the police raided the club. (Para. 4)

III. Paraphrase the italicized parts in the following sentences.

1. Imagination *is not to be divorced from the facts*; it is a way of illuminating the

facts. (Para. 3)

2. Today business organization requires an imaginative grasp of the psychologies of populations *engaged in differing modes of occupation*. (Para. 7)
3. The conduct of business now requires intellectual imagination of the same type *as that which in former times has mainly passed into those other occupations*. (Para. 8)
4. Hence, instead of a drudgery *issuing in a blind rule of thumb*, the properly trained man has some hope of obtaining an imagination disciplined by detailed facts and by necessary habits. (Para. 11)
5. But their existence *is the reason for the sustained, rapid progressiveness of European life in so many fields of activity*. (Para. 9)

Translation

Put the following paragraphs into Chinese.

1. The justification for a university is that it preserves the connection between knowledge and the zest of life, by uniting the young and the old in the imaginative consideration of learning. The university imparts information, but it imparts it imaginatively. At least, this is the function which it should perform for society. A university which fails in this respect has no reason for existence. This atmosphere of excitement, arising from imaginative consideration, transforms knowledge. A fact is no longer a bare fact; it is invested with all its possibilities. It is no longer a burden on the memory; it is energizing as the poet of our dreams, and as the architect of our purposes.

2. Thus the proper function of a university is the imaginative acquisition of knowledge. Apart from this importance of the imagination, there is no reason why business men, and other professional men, should not pick up their facts bit by bit as they want them for particular occasions. A university is imaginative or it is nothing—at least nothing useful.

Questions for Discussion

1. What is the relationship between imagination and knowledge? Support your argument.
2. Why is the author concerned about the custom in which the novices are committed? Make comment based on social reality.
3. What conclusion can we draw from the passage? Give your reasons.
4. In China, more and more universities are coming up. Do you think they have justification for their existence? Why or why not?

Text B

A Different Future for Higher Education?¹

"Costs are spiraling out of control, institutions are struggling to survive, and students are paying a fortune. The system is badly broken, but it's not too late to fix it."

by Chester E. Finn²

1 College costs have been rising quickly during the past two decades, and tuitions are rising even faster—much more quickly than family income. Such widening gaps cannot be sustained much longer, and our entire postsecondary education system may have to change radically to survive this economic upheaval. Our response to the current crisis will determine what kind of system develops in its wake. To envision a truly reformed system, we have to consider what has happened in recent years, what is likely to occur if we remain on our accustomed course, and what we must do differently.

Cost Spiral

2 For two decades, college costs have been rising significantly more quickly than inflation and faster than most other goods and services. This refers to costs,

not prices—a distinction of which many in higher education, particularly public institutions, seem unaware. We can think of the cost of a college as its current operating budget divided by its number of full-time-equivalent (FTE) students. For the country as a whole, in round numbers, those costs are now approximately \$16 000 per year in the public sector and a whopping \$30 000 in the private realm. The median household income is approximately \$36 000.

3 Prices have been rising even more quickly than costs. For several decades, prices—mainly tuition and fees—have risen by approximately 2 percent per year more than the CPI³.

4 As prices rise, institutions do more discounting—student aid—to maintain enrollments, access, and diversity. Fewer students pay full tuition, and posted prices⁴ grow increasingly distant from actual or net prices. As institutional aid grows more quickly than external aid programs, universities spend more on student assistance, and each tuition hike generates less net revenue—creating ironic pressure to raise tuitions even higher.

5 Fewer people can afford college out of current income, so individuals and institutions try to spread those costs over more years through prepaid tuition schemes, tax-advantaged⁵ savings plans, and, of course, loans, loans, and more loans. Instead of four or five years of payments like an auto loan, today's students will be burdened with something more like a thirty-year mortgage.

6 Nonetheless, the schools have to recruit enough bodies to keep the revenue flowing. Admissions offices become marketing centers, and schools lure students with new programs, amenities, and services which push costs even higher.

7 To sustain enrollments and serve social justice, the impulse to widen college access continues unabated, but as a growing fraction of each age cohort is allowed in, the colleges have to teach rising numbers of poorly prepared students. This has already changed higher education significantly: many colleges are now providing the sort of education that should have been provided in high school, and the willingness to accept ill-prepared students undermines their dedication in elementary and secondary school. That, in turn, exacerbates the preparedness problem and increases costs for the colleges.

8 Cost and price escalation are affecting enrollment patterns, shifting students from private colleges to heavily subsidized public institutions, to com-