

创造学

CREATOLOGY

编 著

中南大学 喻 胜

国家杂交水稻工程技术研究中心 辛业芸



Compiled by
Central South University Yu Sheng
China National Hybrid Rice R&D Center Xin Yeyun

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前 言

创造是推动经济和社会发展的主导力量，是一个民族兴旺发达、长盛不衰的动力源泉。人类通过不停的创造活动，创造了文化，创立了科学，创造了历史，并推动着人类社会不断地向前发展。

Creation is the leading strength of promoting economic and social development, and it is the unfading motive force of a nationality to be flourishing and prosperous. Through never-ending creating activity, human create culture, science and history, and impel the advancement of human society.

中华民族是一个有创造力的民族，举世闻名的四大发明等在历史的进程中创造过辉煌。在历史的长河中，我们也有过失误，而这些失误一度妨碍了中国的科技创造活动的深入发展。如，早在北宋我们就发明了火药，却因为种种原因减缓了后续技术发明的进程，后来的世界列强利用火药首先发明了洋枪洋炮，他们利用洋枪洋炮侵略中国，瓜分、占领中国的土地，欺压中国人民。中国人从这段屈辱的历史中悟出了真理：“落后是要挨打的”。历史的悲剧不能重演！要提高中国的国际地位，保障国家安全，就必须提高中华民族的科技创造水平，提高全民族的创新素质与创造能力，不停地进行创造活动，去发现新的科学知识、创造新的文化，不断地取得创造性成果并将之转化为生产力，使中国成为世界经济发展的开拓者。

The Chinese Nation is a nation with creativity. The well-known

Four Great Inventions are our pride. There were also faults in the long river of history that had hindered the development of science and technology in China. For example, we invented the gunpowder in the Northern Song Dynasty, but we slowed down the process of the following technological inventions because of various reasons. However, the world powers utilize gunpowder to invent gun and rifle firstly, so they had the power to invade, dismember, and capture China, bully and oppress Chinese people. Compatriots realized the truth from this phase of disgraceful history: "We are vulnerable to be attacked if lagging behind" The disgraceful history can't be performed again! In order to improve our international status, ensure security, we must raise our scientific and technical creating level, improve our innovative quality and creativity, never end our creating activity, never stop to acquire new scientific knowledge or create new culture, and never cease to gain creating fruits and turn them into productivity, all of which make ourselves become the pioneers of economic development of the world.

当今世界，经济一体化的进程日益加快，知识经济快速发展，科技成果的开发速度加快，使得成果商品化、产业化的周期越来越短，这对科技创造人材的创造素质提出了更高的要求，也给每一个国家带来了机遇与严峻的挑战。为此，我国教育的当务之急是培养大量的高科技创造人材，有了大批的高科技创造人材，才能面对科技飞跃发展的严峻局面与挑战；才能适应知识经济快速发展的要求；才能抓住机遇，使中国的社会与经济实现快速发展，赶超世界先进水平；才能使中华民族立于世界之林的前列。

Nowadays, the process of economic integration is accelerated day by day, the knowledge economy is developing fast, and development of science and technology also accelerates, which makes achievements

commercialized and period of industrialization shorter and shorter, all of which demand higher quality of creative talents in science and technology, and have brought the opportunity and severe challenge. For this reason, the top task of our country is to train a large number of high-tech creative talents, which can help us have the capacity to face the severe situation and challenge of fast-developing science and technology, meet the demand of fast-developing knowledge economy, and seize the opportunity to make China catch up with even surpass the developed countries. Only in this way can China stand at the top of the world.

高科技创造性人材不是天生的，也不是通过单纯的学习书本知识就能造就的。尽管阅读书本能够学到高科技知识，成为一般的科技人材，他们能学会别人创造的高新科技知识、能再现别人的创造成果，但不一定有首创高科技新成果的能力，中国现阶段固然需要大量的这类人材以引进高科技创造成果，缩小我们与世界先进技术的差距。从长远来看，我们更需要大量的高科技创造性人材，因为只有自己掌握核心技术，拥有自主知识产权，才能保障祖国的发展与安全。

High-tech talents are not innate. They cannot be brought up through books only. Truly, we can get hi-tech knowledge through reading and become the ordinary scientific and technological talents who can learn the new and high technology knowledge of others and can reproduce the achievement of others, but might not have the ability to initiate new achievements. China needs a large number of ordinary high-tech talents to introduce high-tech achievements and to narrow the disparity. But if we set up a long-term objective, we need a large number of high-tech talents, because only we ourselves master the key technology, have independent intellectual property, can we be in control of our development and our security.

高科技创造性人材的培养是一个系统工程，不是一朝一夕就能取得成效的。为了造就大量的创造性人才，国家要建立正确的培养教育机制。从小学开始就培养学生的创造意识、创造热情与创造欲望，并引导他们进行力所能及的创造活动。一边学习书本知识，一边进行创造活动，在创造中发现问题，然后带着问题去学习书本知识，学习别人的创造经验，解决创造活动中发现的问题，使学生产生成就感，从而进一步激发学生的创造勇气、创造热情与创造思维能力，使他们的创造性人格逐步成长，逐步形成。

The high-tech talents' cultivation is a system engineering that cannot make effects overnight. In order to bring up a large number of creative talents, our country must set up the correct mechanism of education that can foster students' creation consciousness, enthusiasm and desire from childhood, and induce them to do creating activities within their power, carry on creating while studying, find problems in creating, learn book knowledge with questions learn from others, and solve problems in the activity. It makes students have a sense of fulfillment, stimulates their courage, enthusiasm and creative thinking ability, and gradually develops their creative personality.

为了配合学生与成人的创造素质教育，作者通过十几年的“创造学”教学实践，特意编写了这本学时较少的《创造学》教材。本书是按照如下顺序编写的：什么是创造、创造性思维与创造技法？什么是科学发现、技术发明？什么是全国大学生课外学术科技作品竞赛？什么是大学生创业计划竞赛？怎样用创造性思维与创造技法进行科学发现、技术发明？当取得创造成果后，怎样将创新成果写成学术论文？怎样申请著作版权保护、专利保护及书写专利申请文件？等等。读者看完后就可以学着做。本《创造学》语言精炼，用通俗的语言说明深奥的哲学哲理，深入浅出，易学易懂。并用事例、获奖作品联系创造学理论进行说明，使读者

一目了然，可据此模仿、学习，进而完成整个创造过程。

In order to cooperate with the creative quality-oriented education for students and adults, the author specially wrote this textbook Creatology needing few periods based on more than ten years' teaching practice of Creatology. The writing order is as follows: What is creation? What is creative thinking? What are creating skills and techniques? What is a scientific discovery? What is a technological invention? What is the scientific and technological works competition and what is competition of starting an enterprise by college students? How to create with creative thinking skills and techniques? How to write the scientific paper? How to apply for copyright protection and patent protection? How to write the application document of the patent? Readers will know how to do after learning. The language of this teaching material is simple, and it states the abstruse philosophy in popular language, so it is easy to understand and learn. Every theory is proved very clearly by relative examples or award-winning works. After reading, we can imitate, and study to do the whole course of creation.

本书参编人员有杨文堂、任立军。杨文堂编著了三万多字，任立军编著了三万多字。

Yang Wentang and Ren Lijun have taken part in the compiling work. Yang Wentang has compiled more than thirty thousand words; Ren Lijun also has compiled more than thirty thousand words.

特请了邓田生教授参与审阅。

It's also our honor to ask Professor Deng Tiansheng to Participate in checking.

本书的编写参阅了大量创造学与创新学研究成果，这些资料已在参考文献中列出，在此向有关作者表达真挚感谢。由于编者水平的有限，加之创造与创新未知领域太多，错误或不妥之处在

所难免，敬请读者批评指正。

We have consulted many fruits of Creatology and innovation research that have been listed in reference. Now I want to express my gratitude to all related authors. Because of knowledge limitation, additionally too many blanks in the field of creation and innovation, we can not avoid mistakes and improper conceptions, so I would like to accept your comments respectfully.

作 者

2005 年 8 月

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