



# Some Thoughts on the Teaching Content of Mineral Resources Economics

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## ARTICLE INFO

### *Article history*

Received: 12 January 2021

Revised: 19 January 2021

Accepted: 24 January 2021

Published Online: 31 January 2021

### *Keywords:*

Mineral resource economics

Geology majors

Teaching content

## ABSTRACT

Based on the teaching practice of mineral resources economics, this article believes that a certain economic foundation is an indispensable condition for learning mineral resource economics well for the students of geology majors, and the teaching content of mineral resources economics must include the basic knowledge of economics; Mining resource management is an indispensable content for constructing a knowledge system of economic analysis and evaluation of mineral resources. The teaching content of mineral resource economics should include the sustainable use of mineral resources and the environmental protection. In order to meet the needs of society, the teaching content of mineral resources economics must be updated in time.

## 1. Introduction

Mineral resource economics is a marginal subject that includes mineral resource technology science and economic science, it applies the principles and methods of economics to solve problems in the field of mineral resources. The research content mainly includes the comprehensive economic evaluation of mineral resources, the technical and economic evaluation of mineral deposits, the economic evaluation of mineral resource utilization, and the economic benefit evaluation of mineral resource exploration work<sup>[1]</sup>. Mineral resource economics is a major course offered by almost all geology majors at present in China. The study of this course has played a great role in cultivating talents who need to understand both technology and economic, and it is getting more and more at-

attention. This article discusses the problems of the teaching content of mineral resources economics in teaching practice.

## 2. Economics Knowledge is the Foundation of Learning Mineral Resource Economics Well.

Mineral resource economics is the application of the principles and methods of economics to solve problems of the exploration, development, utilization, protection and management of mineral resources, and is a branch of applied economics. Most of the people who initially taught the course had a background of geology and mineral resources, and then shifted their research direction to the field of mineral resources economics. Similarly, almost all people studying mineral resources economics are students

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of geology majors. Mineral resource economics is to apply the principles and methods of economics as a guide to solve the problems such as exploration, environmental protection and management of mineral resources, etc. A good study of mineral resource economics requires not only engineering technology and geological foundation, but also knowledge of economic management. Specifically, it mainly relies on economic management knowledge such as economics, finance, management and other courses; engineering technology and geology foundations such as geology, mining engineering, mineral processing engineering, petroleum engineering and exploration technology theory and methods; Mathematical foundations such as advanced mathematics, statistics and mathematical statistics courses. Due to the comprehensive nature of the courses, many schools arrange mineral resources economics courses in the last few semesters of the university. Students majoring in geology have mastered a relatively solid foundation of mathematics and science, engineering technology, and geology, but few universities of geology majors training programs include economics, finance, and management courses. To students majoring in geology, economics knowledge is the foundation of learning mineral resource economics well. However, in recent years, course hours have generally been compressed, and some courses related to mineral resource economics have also been canceled or reduced. In this case, it is difficult for students to have a certain economic foundation. Under the situation of class hours compression, it is very difficult to re-include economics courses in the major training program. At present, there are several more feasible arrangements: firstly, teachers may draw out 6-8 class hours to supplement basic economics knowledge to students. And secondly, when the teaching process involves specific economic principles and method applications, the teacher will teach in time, and students can learn while using. Third, the current general education courses have economic management course modules, and the class hours generally range from 16-32 class hours, students may master basic economics knowledge through learning.

### **3. Implement the Concepts of Sustainable Utilization of Mineral Resources and Environmental Protection in the Teaching Process**

Due to the characteristics of non-renewable and geographical distribution of mineral resources<sup>[2]</sup>, as well as the environmental problems during the development of mineral resources, the rational development of mineral resources has become a concern that not only meets social needs, but also effectively protects the environment. The

theory of sustainable development guides the rational exploitation of mineral resources and environmental protection, the development and utilization of mineral resources are closely related to the sustainable development strategy of mankind. The teaching content of mineral resource economics should not only introduce the sustainable content of mineral resources, the institutional arrangements to ensure the sustainable use of mineral resources, scientifically formulating mineral resource utilization strategies and encouragement secondary resource industry development, etc, but also introduce new concepts, such as green mines and green prospecting. The “National Green Mine Construction Code” was formally implemented in 2018, providing institutional guarantees for the sustainable development of mineral resources and environmental protection. Green mine refers to the implementation of scientific and orderly mining in the whole process of mineral resources development, and the disturbance of mining area and surrounding ecological environment is controlled within the controllable range. to achieve the goals of ecological environment, scientific mining methods, efficient resource utilization, digital management information and harmonious community in mining areas; Green exploration is guided by the concept of green development, with scientific management and advanced technology as the means, and through the use of advanced exploration means, methods, equipment and technology, it implements the minimization control of environmental impact in the whole process of exploration, minimizes the disturbance to the ecological environment, and repairs the disturbed ecological environment<sup>[3-6]</sup>. After the 19th National Congress of the Communist Party of China, with the in-depth promotion of General Secretary Xi Jinping’s concept of “green water and green mountains are golden mountains and silver mountains”, pollution prevention and ecological restoration in the field of resource development are rapidly implemented. A good textbook can reflect this change and at the same time bring new theories, new views, new ideas and new problems appearing in the resource field are introduced into the teaching materials can keep the teaching content pace with the times.

### **4. The Teaching Content of Mineral Resources Economics Must Be Updated in Time**

In recent decades, fundamental changes have taken place in all aspects of china’s mineral resources field. Mineral resource economics is a niche course that only geology majors learn, and the number of scholars engaged in research is not large. This is an important reason for the slower update of teaching materials. A good textbook can

reflect this change and at the same time introduce new theories, new views, new ideas and new problems in the field of mineral resources, the teaching content can keep up with the times. However, most of the current mineral resources economics textbooks were published around 2000, and the content has not been improved for many years. Take corporate income tax as an example, china has carried out many reforms and adjustments to the tax system after 1994. However, in many textbook cases, the corporate income tax rate still follows the content of the 1994 tax system reform “Income tax rate is 33%, 30% belongs to the central government and 3% belongs to the local government.” Another example is business tax which has entered history in our country and is no longer levied. There are still business tax content in many textbooks and cases, causing the content of textbooks to be out of touch with social reality.

## 5. Mining Resource Management is an Essential Course Content of Mineral Resources Economics

Mining resource management includes not only the management of mineral resources reserves and geological data collection, but also the management of mining rights and administrative laws and regulations related to mining resource management. Both mining resource management and mining resource economy take mineral resources as the main research object and improve the economic benefits of mineral resources exploration and development as the starting point. The two aspects are closely linked and difficult to separate. Mining resource management for accurate understanding of mining resources market, evaluation of resources and economy, technical and economic evaluation of mineral deposits, economic evaluation of mineral resources utilization and economic evaluation of mineral resources exploration, are essential. Therefore, the content of mining resource management is an indispensable part of building a knowledge system for economic analysis and evaluation of mineral resources.

## 6. Conclusion

In the past twenty years, the field of mineral resource-

es has undergone profound changes in China. With the technological progress and the intensification of market competition, economic evaluation in the field of mineral resources exploration, development, utilization and management has become a necessary means for enterprises to avoid risks, strengthen management and improve economic benefits. The economics of mineral resources has played a great role in cultivating talents who understand both technology and management. In the teaching content of the economics of mineral resources, it is necessary to combine the actual situation, check and fill the gaps, improve the teaching effect, and introduce new theories, new ideas and new problems in the field of mineral resources into the teaching content, so as to keep pace with the times.

## References

- [1] Changming Yang.1992. Theoretical Aspects of Mineral Resource Economics[J]. Journal of Hebei College of Geology, 1992(06):632-638. (in Chinese)
- [2] Robert D. Cairns The green paradox of the economics of exhaustible resources[J].Energy Policy, 2014:65.
- [3] SHU Siqu, ZHANG Hongtao, PEI Rongfu, et al.. Quaternary model for sustainable exploration and development of mines[J].Geological Bulletin of China,2017,36(8): 1476-1482.
- [4] XIAO Keyan, XING Shuwen, DING Jianhua, et al. Division of major mineralization belts of China’s key solid mineral resources and their mineral resource potential[J].Acta Geologica Sinica, 2016,90(7):1269-1280.
- [5] MA Cheng, ZHANG Fuliang, LEI Xiaoli et al.Study on environmental management policies of green exploration: a case study of Queensland, Australia[J]. China Mining Magazine,2019,28(6):77-80.
- [6] ZHANG Fuliang, XUE Yingxi, MA Cheng, et al.Green Geo-prospecting: a new model of Geo-prospecting in the new era[J]. Nature Resources Economics of china, 2018,31(8):11-15.