

# *Analysis of Science and Education Integration Education Mode in Applied Local Colleges and Universities—Taking Geographic Science Major as an Example*

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**Keywords:** Science and education integration; education model; geographic science

**Abstract:** Application-oriented as the schooling orientation of local colleges and universities to cultivate talents, still has not formed a perfect talent training program. As a kind of education mode combining education and scientific research, the integration of science and education can not only let teaching drive the level of scientific research to improve, but also let scientific research drive the improvement of teaching quality to form a good effect. Therefore, the education model of science and education integration puts forward good suggestions for the optimization of the talent training mode of geographic science majors. Therefore, the paper puts forward good suggestions for the optimization of the talent cultivation mode of geographic science majors through the science and education fusion education mode. It also takes students as the center of occurrence, operates advanced education concepts, integrates teaching, scientific research as well as learning as a whole, and realizes the cultivation of more talents by applying the way of science and education fusion education in colleges and universities.

## **1. Introduction**

With the development of society and economy, the role of scientific research and education for talents is more and more obvious, and the educational concept of science and education integration of education college talents is proposed. And the undergraduate stage is also an important stage for cultivating scientific research talents and applied talents, through the education mode of science and education integration can better enable students to recognize their future employment or research orientation and improve their learning ability.

## **2. The significance of the integration of science and education for the education of applied local colleges and universities**

### **2.1. Combining scientific research results to improve the quality of lectures**

Some college teachers are research-oriented teachers who spend a lot of time on scientific research work and pay less attention to teaching research. Some college teachers are teaching teachers, most of them are on teaching research work, paying less attention to scientific research

work and results. The integration of science and education can allow college teachers to update their scientific research knowledge, use the knowledge and equipment in the professional research field to let students understand the advanced scientific research knowledge, improve students' learning enthusiasm, and also optimize the content of teaching, make the content of the lectures more in line with the content of scientific research, so that teachers can better communicate with each other and improve the quality of teaching.

## **2.2. Closely link the discipline with social development**

Nowadays, with the development of the times, science and technology and scientific research level are developing rapidly, however, the earth's environment has produced many problems, which poses a challenge for the development of geographic science. Through the educational model of science and education integration, more excellent talents can be cultivated, and in the process of teaching, students can realize the importance of scientific research knowledge to the development of society, and promote the students to pay attention to the actual situation of the earth, so as to make the development of geographic science more targeted and promote the development of society <sup>[1]</sup>.

## **2.3. Cultivate applied talents and innovative talents**

The educational model of science and education integration in the classroom teaching, not only helps to make students understand the important geographic status of the world today, but also allows students to contact the knowledge and equipment of scientific research, in the process of learning to produce a certain awareness of their own abilities, and teachers to communicate more, feedback on their own learning efficiency and the content of their own thinking, to strengthen the students' ability to learn and the ability to think independently, so as to make clear their own Future employment direction or research direction, better for the society to deliver applied talents and innovative talents <sup>[2]</sup>.

## **3. Measures to realize the education mode of science and education integration in geography science majors**

### **3.1. Optimize the curriculum and teaching content**

#### **3.1.1. Optimize the curriculum**

The curriculum of colleges and universities, as the basis of educational resources in colleges and universities, has a directional and decisive role in the cultivation of talents in colleges and universities. Therefore, the curriculum should lay a good foundation for talent cultivation. First of all, it should apply the education model of science and education integration, analyze the content of scientific research and teaching content, and improve the curriculum by combining the advanced scientific research content with the actual situation of the earth at present <sup>[3]</sup>. For example, while offering basic courses, courses related to scientific research and different professional directions are offered, and some special courses can also be carried out by combining the geographical characteristics of the region. And set up innovation credits to encourage students to participate in scientific research-related courses and actively participate in teachers' scientific research activities to improve students' innovation ability, so as to realize the education model of science and education integration and lay a good foundation for cultivating talents <sup>[4]</sup>.

### **3.1.2. Improve teaching content**

Some college teachers are heavy on teaching and light on scientific research, and some college teachers are heavy on scientific research and light on teaching, so they can let teachers exchange and communicate with each other about their teaching methods and the latest scientific research results, so that the curriculum and teaching content can be integrated with science and education. In terms of teaching content, teachers should integrate advanced subject knowledge into daily teaching, so that students have a certain understanding of the subject's cutting-edge knowledge, and generate curiosity about scientific research knowledge, improve students' motivation to learn, and cultivate students' professional awareness and scientific research thinking. In the teaching process, teachers should adopt more laboratory teaching and outdoor teaching to let students contact the basic work content and equipment of scientific research, and have their own understanding and concept of scientific research, so that they can better combine the basic knowledge they have learned to analyze the geographic problems in real life, and lay a solid foundation for the cultivation of application-oriented talents and innovative talents <sup>[5]</sup>.

## **3.2. Strengthening practical teaching and scientific research ability**

### **3.2.1. Strengthen outdoor practical teaching**

As a specialized discipline for researching and analyzing geological landforms, humanistic landscapes and other objects, geographic science majors have fixed outdoor field practice bases in China, which provide a good learning platform for students majoring in geographic science. In the process of outdoor practice teaching, students are required to observe and analyze the environment, climate, geology, soil and other elements of the study site, and to think and analyze independently by combining with the theme of the study requested by the teacher <sup>[6]</sup>. This teaching method not only allows students to integrate and then apply the knowledge of geographic science majors, but also allows students to recognize the application of cross-disciplines such as geology, botany, life sciences, etc. in practice in the outdoor practice, to strengthen the practical ability at the same time the integration of the knowledge learned, and to promote the enhancement of the students' ability, so that they can better cultivate talents and develop the society.

### **3.2.2. Cultivate students' scientific research ability**

In classroom teaching, teachers should teach students basic knowledge while explaining the relevant scientific research topics and related cutting-edge knowledge, through the scientific research knowledge as a case, so that students have an understanding of the research content of geoscience majors. Teachers can also put students into groups to study the project, through the students' division of labor and independent thinking is not only conducive to improving the students' thinking ability and basic scientific research ability, but also the teacher should always pay attention to the group's research, and give some guidance and advice.

If possible, you can also let the students to the laboratory to learn the scientific research process will be used in the equipment, learning some of the ways and means of scientific research, so that students have a certain understanding of some of the basic ideas and processes of scientific research experiments, but also under the guidance of the teacher, for the teacher's scientific research work to do some auxiliary work to improve the scientific research ability of students.

Teachers should also actively encourage students to participate in scientific research activities, encourage students to take the group as a unit, enroll in professional-related scientific research activities and disciplinary competitions and competitions, etc. Teachers, as instructors, can be a certain guide to the student's activities group members, and students to communicate more to

understand their research program, research progress, problems encountered, etc., and according to the actual situation to guide the students to analyze and solve the problem, so as to enhance the scientific research ability of students.

### **3.3. Clear employment orientation and cultivation program**

#### **3.3.1. Clear Employment Orientation**

As a science major, Geography Science includes many subdisciplines, such as Natural Geography and Resource Environment, Geographic Information Science, Human Geography and Urban and Rural Planning, etc. In addition to Natural Geography and Human Geography, Geography Science is also a major of Geography Science. In addition to the basic disciplines such as natural geography and human geography, there are many courses with professional orientation, such as remote sensing technology, surveying and cartography, tourism geography, natural disaster science and so on. Different disciplines point to different employment directions. Teachers should take into account students' interests and professional achievements in different courses, and combine them with the demand for geographic sciences in the society to classify suitable professional directions for students and do a good job in cultivating application-oriented talents. Meanwhile, to ensure the employment of students, colleges can also cooperate with local units related to the need for geoscience, so that students can go to the unit for internship, better understand their own professional level, and plan for future employment.

#### **3.3.2. Formulate training program**

The training program as a talent training plan needs to be clear about its own positioning, and should be reasonably adjusted according to the focus of training for applied talents and innovative talents. For applied talents, teachers should focus on combining the regional characteristics when formulating the cultivation program, and cultivate professionals who are conducive to the development of the region. For example, they can send excellent geography teachers to the surrounding secondary schools to improve the comprehensive quality of secondary school students; they can also adapt to the development of regional social and economic development, and formulate professional direction and training programs. For innovative talents, teachers should guide students by combining their own professional fields and encourage students to deepen their cultivation to improve their scientific research thinking and ability.

### **3.4. Realizing the integration of industry, academia and research with science and education**

#### **3.4.1. Industry academia research**

In order to strengthen the employment guidance for talents, the thinking on the aspect of industry-academia-research and should be increased, so that students can have time to interface with the industry in the process of learning. The application of teaching practice bases can also be increased, so that teaching, production as well as scientific research can be integrated, and science and technology can be used to enrich students' knowledge, thus increasing the science and education demonstration area within the scope of students' study, in order to increase the support in scientific research as well as teaching activities.

At the same time, should also rely on the way of industry, academia and research, regular consideration of talent, so that it is based on the completion of the class hours, to be able to carry out practical assessment, so that the teaching staff can better evaluate the talent to ensure that the talent in the process of development can summarize their own shortcomings, to master their own

should be in the area of which to put their energy. Only let the talent to grasp their own research results, get due compensation, can ensure the smooth implementation of teaching, research and production activities. For example, it is possible to give autonomy to secondary colleges so that they can hire competent geoscience professionals and increase the number of teaching managers so that they can better implement research services.

Similarly, the number of research-oriented teachers can be increased by relying on basic research, so as to ensure that teachers can master more advanced knowledge through their own learning, so that they can constantly enrich their own connotation, so as to ensure that the geoscience program can be accomplished in the process of development. Can also be carried out through various competitions, pay attention to the effectiveness of teaching, output results, etc., so that they can be included in the daily assessment of the geoscience program. In this way, not only can motivate students, but also can motivate teachers, coordinate the relationship between teachers and students, using the method of science and education linkage, to ensure that students can tap into the school's teaching resources, so as to achieve the simultaneous enhancement of the ability to learn, use and research.

### 3.4.2. Integration of science and education

In order to realize the integration of science and education in higher vocational colleges and universities, the university should raise the attention to the development of talents, use the macro-control approach to ensure that teaching managers and research department workers can combine their work, use the synergy and cooperation approach to solve some of the contradictions in research and teaching work. Prevent teachers from taking up students' time in the course of their work, but allow students to have more opportunities to do what they are interested in, so that industrial colleges and universities can become a new carrier for students in the process of development. So quickly, the two-tier management system can be utilized, so that the material, human and financial rights can be handed over to the second level of the college, so that it can ensure that they can actively carry out self-development, development and management work.

At the same time, industrial colleges also need to increase research and development personnel and the employment of advanced staff, so that their interface with students, the use of research and study conferences and other ways to ensure that they can provide guidance to the talents of ideas and related issues. In this way, they can ensure that students take the initiative to think about problems and have the ability to analyze, identify and solve problems. In this way, the contradiction between science and education in practice can be avoided, and the integration of industry, science and education in schools can be realized.

## 4. Conclusion

In summary, the educational model of science and education integration is not only conducive to the cultivation of innovative talents and applications in local universities, but also enables the geoscience majors to carry out teaching and scientific research activities in combination with the actual situation of the society, transform scientific research resources into effective teaching resources, cultivate the students' abilities, and promote the progress of scientific research while fostering the development of the society.

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