

## **The Impact of the Mobility of Researchers on Scientific Research Results**

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*Abstract: In recent years, the state and universities have increased their funds for scientific research, funded scientific researchers to study abroad, participated in various academic seminars, and promoted their exchanges and cooperation with researchers from other schools, other countries or other fields. The influence of the movement of researchers on their scientific research ability has become a key point of research. Through collecting the biographical information and publishing situation of 400 teachers in Xi'an University of Electronic Science and Technology, this paper focuses on the influence of spatial mobility and subject mobility of scientific researchers on scientific research results by means of empirical analysis. It is concluded that the mobility of university researchers has a positive effect on their scientific research ability. Finally, some suggestions for scientific research institutions and universities should be put forward, such as organizing academic exchange activities at home and abroad, advocating mobile learning and enhancing the mobility of scientific researchers.*

*Keywords: University researchers; scientific research results; space movement; subject movement.*

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### **1. INTRODUCTION**

In the era of high-speed development of society and economy, our demand for talents is not limited to a certain field or a certain institution, but also hopes to cultivate more new talents with broad vision, broad requirements and pan-cognition. Comrade Jiang Zemin stressed that it is necessary to establish an employment mechanism that is full of vitality, be able to rise above and below, and promote outstanding talents to stand out from the crowd. It is necessary to establish an open, flexible talent market allocation mechanism and a reasonable and orderly flow mechanism conducive to talents [1].

American scholar Katz found that the length of life of the organization is related to the results achieved by the organization, and that the time spent by researchers within the same organization has an impact on the level of information communication and the results achieved. He suggested that long-term organizations need to be reshuffled through the flow of talent to strengthen organizational vitality and improve efficiency. Under the background of the rapid development of information technology, the process of economic globalization is speeding up and the economy among countries depends on and permeates each other. In order to have a sufficient place in the world, various countries begin to vigorously develop scientific

technological innovation and introduce scientific technological talents. Developed countries such as France, Germany, Japan and other developed countries have revised the relevant immigration and labor in succession. Laws and policies on employment, loosening the barriers to entry into foreign science and technology talent, and imposing stricter controls on the entry of ordinary workers. China, India, Mexico, Brazil, South Korea, China, India, Mexico, Brazil, South Korea, Indonesia and other countries have also introduced various policies to attract the return of talents from abroad and the inflow of talents from other countries [2].

Under the background of the urgent demand for talents and the increasingly obvious trend of short-term mobility, more and more countries in the world attach importance to the exchange and movement of talents. Therefore, talent mobility has also become the subject of many scholars' research. Docquier, Frederic found that, the flow of international labour has two distinct characteristics: highly educated people are more inclined to emigrate than less educated people, and tend to move towards well-developed, high-tech countries [3]. Ai Yiping applies the theory of economic globalization, deeply analyzes the influence of economic globalization on the cross-border flow of talents. Her research shows that in the context of economic globalization, Cross-border mobility of talent has become easier and more likely [4]. On the flow of talents in China, Yan Liang statistically analyzed the situation of talent flow in China. The results show that there are three trends in the flow of talents in China: high-tech talents tend to flow to state-owned enterprises or government institutions; Fewer people are willing to go to township enterprises and small enterprises; A large number of brain drain, study abroad home account for a small proportion; high-tech talent flow speed, the frequency is accelerating [5]. Zhou Zhijun believes that the exchange and rental of talents can give them more opportunities for development and rich experience, and after the lease is completed, they can also bring new ideas and new methods to their original units, which is an effective way for the flow of talents [6].

In the wave of talent flow, the most characteristic part is the flow of scientific research groups. Tian Ruiqiang divided the flow of scientific and technological talents into three categories according to the flow mode: spatial geographical flow, professional department flow and intellectual flow [7]. He Jie and Wang Haochen found that age has an impact on the mobility of researchers, young researchers are easier to move. They also found that the flow of scientific and technological talents in enterprises is more frequent, in contrast, the willingness and trend of scientific research personnel in colleges and universities are obviously weak[8]. Yin Qianqi studied the basic characteristics of talent flow in colleges and universities, that is, the talent flow is becoming more frequent, the invisible flow is more common, and the negative impact gradually appears. He also analyzes the main factors that affect talent mobility in colleges and universities, such as social environmental factors, external competition factors and individual demand factors [9].

To sum up, mobile learning has become an important way to train scientific researchers. Scientific research institutions through various policies to strengthen the mobility of talents. Moreover, over the past few years, more and more attention has been paid to the flow of talents,

which has also triggered our thinking. Is it really necessary for the mobility of talents? What impact can the flow of talents bring to the development of high-tech talents and scientific research institutions? Taking the teachers of Xidian University as an example, this paper takes the SCI database, the CNKI database and the homepage of the school teachers' personal website as the data sources, and collects the biographical data of 400 teachers and the publication of their papers. This paper studies the influence of teachers' spatial mobility and subject mobility on scientific research achievements, and puts forward some suggestions on the management talent system of colleges and universities to improve the scientific research ability of scientific researchers, promote the construction of high-quality scientific research teams and the development of regional high-tech.

## **2. RESEARCH DESIGN**

### **2.1 Research hypothesis**

According to Strenze, tech talent can be measured by their social status, industry recognition or their own contribution. This shows that scientific and technological talents will continuously move in order to obtain higher social status and better results, and each move will stimulate their research potential, and their scientific research ability will be improved accordingly [10]. Considering that teachers change schools during learning and teaching in order to reach out to the organizations closest to their goals and achieve higher achievement, we propose the following two assumptions about the movement of teachers to schools:

Hypothesis 1: The movement of teachers' school has a significant positive effect on their scientific research ability.

Hypothesis 2: The difference between teachers' learning and teaching schools has a significant positive impact on their scientific research ability.

Under the background of economic globalization, the trend of short-term transnational movement of scientific researchers has become more and more obvious. In addition, scientific research institutions, colleges and universities have also paid more and more attention to the international vision and advanced scientific research thinking of talents. More and more people choose to study abroad, because they provide financial support for cross-border communication researchers. Therefore, this paper puts forward the following hypotheses:

Hypothesis 3: Teachers' study experience abroad has a significant positive impact on their scientific research ability.

Kuke makes an empirical analysis of the creativity of graduate students after taking part in work. The results show that the innovation ability of researchers can be improved by changing work departments and research topics [11]. Moreover, many colleges and universities have also carried out cross-disciplinary research and preferred teachers with multi-disciplinary knowledge. Therefore, the author thinks that teachers' study of two or more subjects has a positive impact on their research ability, so the following two hypotheses are put forward:

Hypothesis 4: The change of teachers' subjects during the study period has a significant positive effect on their scientific research ability.

Hypothesis 5: The change of the teachers' subject during the teaching has a significant positive effect on their scientific research ability.

## **2.2 Theory model**

The OECD points out that there are two main types of liquidity: external mobility and internal mobility; external mobility can be divided into geographical mobility and labor mobility, internal mobility refers to occupational change and intra-firm mobility [12]. On this basis, Tian Ruiqiang proposed that three dimensions can be used to measure the flow of scientific and technological talents, namely, spatial geographical mobility, occupational sector mobility, intellectual flow [7]. Based on previous research and collected data, this paper classifies teacher mobility into two categories: spatial mobility and subject mobility. Spatial movement refers to the teacher's experience of changing schools or visiting abroad during the period of study and teaching, and the subject movement refers to the subject changes during the teacher's study.

For the research achievements of teachers, this paper mainly considers the quality and quantity of the research results. Based on Sun Yang and Zhang Peng's research on the present research situation of Xi'an Party School[13], we take the number of papers as an indicator to measure the achievements of teachers' scientific research, and measure the academic value of teachers' papers by the average and highest cited times of the papers. That is, as an important indicator of quality.

## **2.3 Data sources**

This paper takes the teachers of Xidian University as the research object, and collects the data of 400 teachers' curriculum vitae and scientific research achievements. Among them, the data of teachers' curriculum vitae are from the teachers' home page of Xidian University, and the data of teachers' scientific research results are from CNKI and Web of Science. The software used in the data analysis of this article is SPSS 20.0.

The resume data in the teacher's home page include personal information, scientific research, thesis achievement, curriculum teaching and so on. Personal information includes teachers' basic information, educational experience, award-winning experience, overseas visiting experience, career change. The achievement of the paper is to record the detailed contents of the papers published by the teachers, but because the information of the results is not updated in time, some recent published articles have not been added to the paper, so we decided to search the teachers' research results through the database at last.

Through collection, teachers' resume data can be extracted from their colleges, schools, years of teaching, abroad, career changes, and so on. On the basis of this information, we screened out mobile data about teachers, including "teachers attending schools", "teachers teaching schools", "time spent studying abroad while teachers are working", "subjects during teacher learning" and "subjects during teachers' teaching" are used in the study of the effects of teacher mobility on scientific research results. In order to facilitate the software analysis, we carry on the digital standardization processing to the data. For example, studying in the same school during the period denoted by "1", not in the same school denoted by "0"; studying abroad while

teachers are teaching denoted by "1", not studying abroad denoted by "0"; While teachers are studying and teaching, they use "1" for subject mobility, and "0" for no subject movement. For measuring the results of teachers' scientific research, we select the papers published by teachers on SCI and CNKI databases as data sources, and use the author's name and the author's unit as keywords and screening criteria to search. In addition to counting the number of papers published in the last five years, the corresponding data such as the average number of citations, the highest number of citations and so on are collected. Finally, "the number of published papers in the last five years", "the average number of published papers' citation times in recent five years" and "the highest number of published papers' citation times in recent five years" were used as dependent variables to measure teachers' scientific research ability.

### 3. EMPIRICAL ANALYSIS

#### 3.1 Research on the correlation between teacher mobility and scientific research ability

First of all, in order to study whether the movement of teachers during their study and work is related to their scientific research ability, we will make the correlation analysis between the variable "the number of papers published in the past five years", "the average number of papers' citations in the past five years". "the highest number of papers' citations in the past five years" and the independent variable "the movement of schools during study", "the movement of schools during study and teaching", "the study experience abroad while working", "the subject changes during study" and "the subject changes during teaching" . The results of the correlation analysis are shown in Table 1.

Table 1. Test results of the correlation analysis

Independent variable Dependent variable	Number of papers published in the past five years	Average number of papers' citations in the past five years	Highest number of papers' citations in the past five years
The movement of schools during study	-0.102**	-0.156**	-0.138**
The movement of schools during study and teaching	-0.070	-0.201**	-0.127**
The study experience abroad while working	0.225**	0.162**	0.108**
The subject changes during study	0.219**	0.018	0.130*
The subject changes during teaching	0.155**	-0.042	0.050
* p<0.05 ** p<0.01			

As can be seen in Table 1, "the number of papers published in the last five years" is related to "the movement of schools during study", "the study experience abroad while working", "the

subject changes during study" and "the subject changes during teaching". "The average number of papers' citations in the past five years" is related to "the movement of schools during study", "the movement of schools during study and teaching" and "the study experience abroad while working". "The highest number of papers' citations in the past five years" is related to "the movement of schools during study", "the movement of schools during study and teaching", "the study experience abroad while working" and " the subject changes during study".

**3.2 Research on the influence of teacher mobility on scientific research capability**

First, we establish a multivariate linear regression model between the first set of variables:

$$y_1 = \beta_{10} + \beta_{11}x_{11} + \beta_{12}x_{12} + \beta_{13}x_{13} + \beta_{14}x_{14}$$

y1 represents the "the number of papers published in the last five years", x11, x12, x13, x14 respectively represents "the movement of schools during study", "the study experience abroad while working", "the subject changes during study", and "the subject changes during teaching", as shown in the Table 2.

Table 2. Results of the regression analysis  
Coefficientsa

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std.Error	Beta			Tolerance	VIF
(Constant)	13.439	3.377		3.980	.000		
The movement of schools during study	-6.309	3.144	-.056	-1.052	.032	.977	1.024
The study experience abroad while working	9.705	3.196	.160	3.036	.003	.989	1.012
The subject changes during teaching	26.160	7.962	.172	3.286	.001	.995	1.005
The subject changes during study	11.445	3.067	.197	3.732	.000	.979	1.021

a. Dependent Variable: Number of papers published in the past five years

It can be seen from the correlation table that the tolerance Tolerance of each independent variable is greater than 0.1, and the variance expansion factor (VIF) is less than 10, indicating that there is no multicollinearity between the independent variables. We can also see that the P values are all less than 0.05, indicating that there is a linear relationship between the four independent variables and dependent variables, and all of them have an impact on "the number of papers published in the past five years". Among them, "the movement of schools during study" has a negative impact on the number of papers published in the past five years, indicating that if the teacher is not in the same school during the school period, the number of papers published in the last five years is relatively large; "The study experience abroad while

working" has a positive effect on the dependent variable, indicating that if teachers have experience of studying abroad during their work, more papers will be published; Similarly, "the subject changes during teaching" and "the subject changes during teaching" also have a positive impact on the dependent variable.

In the same way, a multivariate linear regression model of "average number of papers' citations in the past five years" and related variables can be established. It can be concluded that "the movement of schools during study" has a negative effect on the dependent variable. If the post stage is not in the same school, the average number of papers' citations in the last five years will be more frequent; "The movement of schools during study and teaching" has a negative effect on the dependent variable, which shows that teachers who learning and teaching are not in the same school, their average number of papers' citations in the last five years will be more frequently cited.

Based on the multivariate linear regression model of the "the highest number of papers' citations in the past five years" and the related variables, it is concluded that the "the movement of schools during study" has a negative effect on the dependent variable, and the "the subject changes during study" has a significant positive effect on the dependent variable, which indicates that teachers who have subject changes during the study have higher maximum number of the papers' citations.

The Study on the Difference of Teachers' Moving Factors on Their Scientific Research Achievements

The above analysis simply describes the impact of teacher mobility on scientific research results. Considering that there are more classified variables in independent variables, in order to get a more in-depth, intuitive understanding of teacher mobility to bring about significant differences in scientific research results. In this paper, the collected data will be tested for difference (non-parametric test) and mean value analysis.

**3.3 The influence of teacher's spatial mobility on scientific research ability**

3.3.1 The influence of teacher's mobility in school on their scientific research ability.

We use the "the movement of schools during study" as a grouping variable, and use the three dependent variables as the test variables to get the results in Table 3.

Table 3. Results of the difference test

	The number of papers published in the past five years	The average number of papers' citations in the past five years	The highest number of papers' citations in the past five years
Mann-Whitney U	15476.000	14537.000	14277.500
Wilcoxon W	51254.000	50315.000	50055.500
Z	-1.981	-2.846	-3.088
Asymp.Sig.(2-tailed)	.048	.004	.002

a. Grouping Variable: The movement of schools during study

From the results of the non-parametric test, we can see that Asymp.Sig.(2-tailed) is less than 0.05, which indicates that there are significant differences in dependent variables for teachers in school without movement. In order to see more clearly the concrete difference of the teacher's movement to the scientific research achievement, we analyze the average value of the scientific research achievement, and get the following results in Table 4.

Table 4. Mean description of teachers' movement of schools during study

Variables	The movement of schools during study	N	Mean	Std. Deviation	Median
The number of papers published in the past five years	1	267	21.76	8.274	14.00
	0	133	27.20	32.876	16.50
The average number of papers' citations in the past five years	1	267	2.72	2.111	2.24
	0	133	3.58	2.898	2.75
The highest number of papers' citations in the past five years	1	267	16.37	20.397	10.00
	0	133	23.40	30.802	13.00

It can be found from the mean description table that 267 of the 400 teachers are not enrolled in the same school that 133 teachers have changed during their studies. And "the number of papers published in the past five years", "the average number of papers' citations in the past five years", and "the highest number of papers' citations in the past five years" are higher in the case of a change in school. Therefore, teachers do not study in the same school has a positive impact on their scientific research ability. The reason for this conclusion may be that teachers study in different schools when they are students, they will be exposed to more scientific researchers. All of them have their own ideas, so that frequent contact with different people will collide with more different sparks, but also will learn multi-level, multi-faceted and multi-domain knowledge, and will have a subtle impact on their scientific research level.

### 3.3.2 The influence of teachers' school movement during the period of learning and teaching on the scientific research ability.

We use the "the movement of schools during study and teaching" as a grouping variable, and use the three dependent variables as the test variables to get the results in Table 5.

Table 5. Results of the difference test

	The number of papers published in the past five years	The average number of papers' citations in the past five years	The highest number of papers' citations in the past five years
Mann-Whitney U	17015.500	14858.500	15034.000
Wilcoxon W	50168.500	48011.500	48187.000
Z	-1.117	-3.072	-2.915
Asymp.Sig.(2-tailed)	.264	.002	.004

a. Grouping Variable: The movement of schools during study and teaching



According to the two independent sample tests of non-parametric test, the school movement during the period of teacher learning and teaching has a significant impact on "the average number of papers' citations in the past five years" and "the highest number of papers' citations in the past five years". The average value is described as Table 6.

Table 6. Mean description of school movement during study and teaching

Variables	The movement of schools during study and teaching	N	Mean	Std. Deviation	Median
The average number of papers' citations in the past five years	1	257	2.64	1.913	2.15
	0	143	3.66	3.059	2.91
The highest number of papers' citations in the past five years	1	257	16.39	21.541	10.00
	0	143	22.89	28.764	13.00

As can be seen from the table, 257 of the 400 teachers study and teach in the same school, and 143 teachers do not. And the citation of the paper is higher when teachers' study and teaching are not in the same school. This shows that teachers studying and teaching in the same school is conducive to improving the quality of publishing papers, because teachers during school and teaching exposure to different scientific research teams, and members of the scientific research team during the teaching period did not cooperate with each other. With all sorts of unique thinking, different methods of research are likely to create a lot of new ideas and perspectives.

3.3.3 The influence of the movement of studying abroad during their work on the scientific research ability.

"The study experience abroad while working" as a grouping variable, and "the number of papers published in the last five years", "the average number of papers' citations in the past five years" and "the highest number of papers' citations in the past five years" are used as test variables to measure the scientific research ability. The results are shown in Table 7.

Table 7. Results of the difference test

	The number of papers published in the past five years	The average number of papers' citations in the past five years	The highest number of papers' citations in the past five years
Mann-Whitney U	11767.500	15057.500	12981.500
Wilcoxon W	46747.500	50037.500	47961.500
Z	-5.556	-2.535	-4.442
Asymp.Sig.(2-tailed)	.000	.011	.000

a. Grouping Variable: The study experience abroad while working

It can be seen that there is a significant difference between "the number of papers published in the last five years", "the average number of papers' citations in the past five years" and "the

highest number of papers' citations in the past five years". The average value analysis is as Table 8.

Table 8. Mean description of the study experience abroad while working

Variables	The study experience abroad while working	N	Mean	Std. Deviation	Median
The number of papers published in the past five years	1	136	32.96	37.067	21.00
	0	264	18.76	24.255	12.50
The average number of papers' citations in the past five years	1	136	3.17	2.149	2.098
	0	264	2.92	2.563	2.889
The highest number of papers' citations in the past five years	1	136	22.40	23.294	15.00
	0	264	16.81	24.957	10.00

It can be seen from the table that although most teachers have no experience of studying abroad during their work, the average value of scientific research results is that the teachers who have this experience are relatively high. This shows that the experience of studying abroad has a positive effect on the scientific research achievement of teachers. That is to say, the movement of teachers during work can improve the teachers' scientific research ability. This is because visiting excellent schools abroad can learn advanced knowledge and ideas from other countries, and will also know some outstanding international scientific research personnel, and can collide with innovative ideas. It can improve the quality of teachers' papers to a certain extent.

### 3.3.4 The Influence of Subject Mobility on Scientific Research Ability.

All of the above assumptions are the angle of spatial movement, but for researchers, a shift in the direction of research can also lead to new thinking in scientific research. Therefore, this paper also considers the influence of discipline changes during study and teaching period on teachers' scientific research achievements.

(1) The influence of subject movement on the scientific research ability of teachers during their learning period.

As for the definition of subject movement, this paper is based on the second-level discipline name of "China degree and Postgraduate Education Information Network" to ensure the accuracy. We regard "the subject changes during study" as a grouping variable, three dependent variables as test variables, the results are shown in Table 9.

Table 9. Results of the difference test

	The number of papers published in the past five years	The average number of papers' citations in the past five years	The highest number of papers' citations in the past five years
Mann-Whitney U	8755.000	12388.500	11000.500
Wilcoxon W	17270.000	20903.500	19515.500
Z	-5.183	-.941	-2.562
Asymp.Sig.(2-tailed)	.000	.347	.010

a. Grouping Variable: The subject changes during study

It can be seen from the statistical table that there is a significant difference between "the number of papers published in the past five years" and "the highest number of papers' citations in the past five years". Next, do the mean analysis of the variables, the results are shown in Table 10.

Table 10. Mean description of the subject changes during study

Variables	The subject changes during study	N	Mean	Std. Deviation	Median
The number of papers published in the past five years	1	203	27.26	33.002	18.00
	0	130	14.54	16.324	9.00
The average number of papers' citations in the past five years	1	203	3.09	2.391	2.447
	0	130	2.92	2.575	2.282
The highest number of papers' citations in the past five years	1	203	21.22	29.340	12.00
	0	130	14.55	15.540	10.00

It can be seen from the statistical table of mean analysis that both the quantity and quality of published papers of teachers with subject movement during study are higher. It indicates that there is a positive impact on teachers' scientific research results during the study period, and changes can improve teachers' scientific research ability. Studying in school is the first stage for researchers to start their scientific research career. This stage has influenced the direction, content, and so on that they want to study in the future, and subject changes can enable them to have a wider range of knowledge. And in the process of learning, the content of multiple disciplines is linked together, with a strong knowledge reserve and a variety of research methods, which is conducive to innovation in scientific research. The production of scientific research ability will naturally improve.

(2) The influence of subject movement on the scientific research ability of teachers during their teaching period.

We regard "the subject changes during teaching" as a grouping variable, the three dependent variables as test variables, the results are shown in Table 11.

Table 11. Results of the difference test

	The number of papers published in the past five years	The average number of papers' citations in the past five years	The highest number of papers' citations in the past five years
Mann-Whitney U	2170.000	2072.500	2230.000
Wilcoxon W	74941.000	2150.500	2308.000
Z	-.300	-.551	-.145
Asymp.Sig.(2-tailed)	.765	.582	.885

a. Grouping Variable: The subject changes during teaching

From the results of the difference test, it can be seen that there is no significant difference in the three dependent variables. This also validates the conclusion that there is no correlation in the correlation analysis. We looked at the data collected and found that only 12 of the 400 teachers had subject changes during teaching, accounting for only 3% of the total. Therefore, the majority of teachers have no subject movement should be the cause of the bad results, the data is too inclined so that the influence of a small amount of data on the variables is weakened. Therefore, there is no obvious difference, and no significant correlation between nature.

#### 4. CONCLUSIONS

Based on the results of the above-mentioned data analysis, we can find that: (1) Whether there is a change in school, learning is not in the same school as teaching, or having study experience abroad during work, all represent that teachers have a strong spatial mobility ability, and under the strong mobility ability, teachers' scientific research ability is also improved. (2) The scientific research results of teachers with subject changes are obviously stronger than those without subject changes, which shows that strong subject mobility can improve teachers' scientific research ability. Based on the above conclusions, the following suggestions can be made:

We should strengthen the scientific consciousness of researchers in research institutions and universities. Nowadays, many university teachers devote most of their energy to teaching courses, and take scientific research as a task assigned by the school. Therefore, universities should advocate and promote teachers' personal participation in scientific research practice, because only by having enough experience can the practical spirit and necessary scientific research foundation of scientific research be imperceptibly infiltrated into the daily lectures. Colleges and universities should also select academic leaders according to strict mechanisms and strengthen the training of leaders. Schools can also set up corresponding incentive mechanisms, including excellent awards for the number of scientific research achievements, and can also be based on teachers' journal influence of published papers and the number of papers cited to give excellent quality awards, not only stimulate teachers to increase scientific research tasks, but also improve the average quality of papers.

Improve the mobility of university teachers. We can find from the study that the movement of teachers can improve their scientific research ability, but many of the teachers who stay in

school have completed their undergraduate, master's and doctoral studies in the same place and in the same school. This can increase loyalty to the school, but it is not conducive to the improvement of its scientific research level. Therefore, in the study stage, colleges and universities should encourage students to go to other schools or other countries for academic exchanges. For teachers, although colleges and universities now allow teachers to apply for overseas visits on their own terms, we find that only a few teachers have gone abroad, so schools should create more opportunities for teachers to visit abroad and exchange across schools, or pay attention to establishing friendly and long-term cooperative relations with excellent universities in other countries. Colleges and universities can also accept more graduates or teachers from other schools, these teachers with the original scientific research team thinking must be a fresh blood, they can collide with each other new innovation spark. In addition to universities and scientific research institutions, the national education department should also pay more attention to the activities of visiting and exchanging between different schools at home and abroad, and provide more opportunities for communication and various kinds of visiting projects. It is beneficial for the innovation of scientific research work and the promotion of scientific research results to make teachers more contact with the scientific research team outside our school.

Strengthen the interdisciplinary research. The cross-study of different disciplines can not only solve the difficult problems of one discipline by other disciplinary means, but also expand the research angle of disciplines, so as to improve the level of scientific research and the achievements of scientific research. Therefore, colleges and universities should strongly promote teachers conducting cross-disciplinary research, teachers from different disciplines working together on the same subject, and providing them with more opportunities to study and communicate abroad together. Or the teachers who advocate studying abroad carry on in-depth discussion and mutual reference with the researchers of other disciplines abroad in order to achieve academic mutual solution and innovation in scientific research. National education departments can also organize more interdisciplinary exchanges of academic meetings, give special financial support to interdisciplinary scientific research teams in universities, and enhance the enthusiasm of researchers for interdisciplinary research. universities can also set up more cross-disciplines so that students can study multiple subjects at the same time at the learning stage and understand the common knowledge between them, to lay the foundation for future scientific research.

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