

Survey of research quality and ability of Vocational School Teachers

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Abstract

Based on a survey of the teaching staff in 20 Vocational College of Shandong Province, the present paper described the current research situation of vocational colleges in China with detailed figures and proposed strategies to strengthen the scientific research management of vocational colleges.

Index Terms: Vocational School teachers; research understanding ; research conditions ;research quality and ability; strategies

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1. Introduction

Scientific research is the inexhaustible drive for the development of higher vocational colleges and an important link connecting between production and research as well as the main way to improve school quality. The research team took two years to conduct a survey and collected a large number of raw data reflecting the current situation of the research system at vocational colleges.

Totally 150 survey questionnaires were distributed and 126 were collected, of which 122 were valid, covering nearly 20 vocational colleges. All subjects were randomly selected in these vocational colleges. All data were analyzed by the mathematical analysis of statistical models through the software of SPSS 16.0. In addition, Kolmogorov - Smeal Nove test, chi-square test were employed to make a comparison between some factors and the correlations between the factors were analyzed. Both the quantitative and qualitative analysis was used in this study. Using the combination of various analytical methods, the deep analysis was conducted to reveal the problems. The percentage figures were used to illustrate the basic information of the vocational teachers, their scientific achievements and their understanding of scientific research. The questionnaire included eight tables, the specific report as follows.

2. Basic information of the subjects

Statistical results of table 1 showed that the teachers between 20-29-year-old accounted for 38.5%, 30 to 49 accounted for 58.2%; the teachers with the title of junior titles accounted for 41%, lecturer and associated professor accounted for 58.2%. 77.1% of them were from the university; 13.1% were from secondary

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vocational school; 4.1% were transferred from the secondary school and only 5.7% were transferred from other walks of life, which indicated the diversity in the sources of vocational college teachers.

Among the teachers surveyed, teachers teaching specialized courses, practice and practicum accounted for 78.7% and 21.3% of them were teachers of basic courses, which showed the wide distribution of respondents in academic field. In the survey of academic degrees, the teachers with bachelor's degree accounted for 77.1% and the teachers with master's degree accounted for 17.2%. The ratio of teachers with doctor's degree and those with professor's title are similar, with both accounting for 0.8% respectively.

TABLE I. BASIC INFORMATION OF TEACHERS SURVEYED

Age	20-29y	30-39y	40-49y	50y--
	38.5	37.7	20.5	3.3
professional title	assistant lecturer	lecturer	associated professor	professor
	41	39.3	18.9	0.8
previous working place	university graduates	junior vocational school	middle school	From other schools
	77.1	13.1	4.1	5.7
education	associated degree	bachelor	master degree	Doctor degree
	4.9	77.1	17.2	0.8

3. The understanding of the scientific research

The result of the survey (see Table 2) showed that 88.6% of teachers thought it necessary to carry out research work, 88.5% of teachers thought it helpful to carry out research work to the professional development of teachers and 83.7% of teachers believed that scientific research promote teaching greatly. As to the current scientific research quality and capability of teachers in the vocational colleges, only 34.5% of teachers considered it as more satisfied, 65.5% of teachers thought it general or not satisfied. 45.9% of the teachers concur that compared with the university teachers, vocational teachers had poor awareness of scientific research and lower research capacity. 62.3% of them agreed that teachers in vocational colleges had lower level scientific research; 85.2% of them agreed that the theoretical foundation and academic level had great impact on the research work carried out and the results.

TABLE II. THE UNDERSTANDING OF THE SCIENTIFIC RESEARCH (1)

Scales Items	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
necessity of doing research	32	56.6	7.4	3.2	0.8
benefits to development	31.1	57.4	3.3	7.4	0.8
benefits to teaching	27.9	55.8	5.7	9.8	0.8
satisfaction to quality and ability	3.2	31.3	28.7	35.2	1.6
comparison between ability and awareness	3.2	42.7	19.7	33.6	0.8
comparison between achievement and level	2.5	59.8	18.0	19.7	0

Table 3 showed that 82% of subjects thought that school funds for scientific research had significant impact on the scientific research achievement; 64% of them thought that local economic conditions had a great impact on the school research funding; Among the respondents, 48.4% of them agreed that compared with ordinary universities, vocational teachers had relatively low pressure of scientific research.

TABLE III. THE UNDERSTANDING OF THE SCIENTIFIC RESEARCH (2)

Scales Items	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
impact of research funding	16.4	9.8	9.8	8.2	0.0
relationship	9.8	54.2	24.6	11.5	0.0
comparison of pressure	3.2	29.6	18.8	44.2	4.2
effort in teaching or research	4.1	38.5	5.7	47.6	4.1
information and means	5.7	60.7	9.0	24.6	0.0
management attention	4.9	50.1	22.1	22.1	0.8
training	12.3	67.3	13.9	5.7	0.8

As to the question “teacher should focus on teaching not in research”, the answers were different. While 42.6% of them agreed, 51.7% of them disagreed. The former believed that the duty and responsibility of the teacher should be teaching, while the latter argued that teachers in vocational college should set aside some time and energy to do scientific research.

66.4% of subjects claimed that teacher had no effective way to get some information especially in economically less developed and backward areas.

55% of teachers thought that the management and school administration didn’t attach importance to scientific research of the teachers; 79.6% of them also thought that teachers in vocational institutions lack the necessary scientific research and effective training.

4. The scientific research quality and ability of the teaching staff

According to the investigation of the individual teacher’s scientific research quality, 38.5% of the teachers thought that they had fixed and relatively fixed areas of research and research orientation and 64.8% of them had basic understanding of research methods and procedures. Only 19.7% Participated in scientific research mainly to improve the teaching, 36% for professional titles, 6.6% for getting a degree, 25.4% for improving their ability. The results also indicated that getting a higher professional title, improving their own capacity and improving research and teaching were the main driving forces of doing scientific research for teachers.

TABLE IV. SURVEY OF SCIENTIFIC RESEARCH QUALITY OF INDIVIDUAL TEACHERS

research orientation	Very solid	Solid	General	Not solid	No orientation
	5.7	32.8	27.9	22.1	11.5
research procedures understanding	very well	clear	not very clear	don’t know	not at all
	3.3	61.5	23.8	9.8	1.6
research reasons	to improve teaching	for title	for degree	enhance ability	others
	19.7	36.0	6.6	25.4	12.3
research results	book	potent	research report	paper	others
	1.6	9.1	13.9	69.7	5.7
time for reading	over 5h	4-5 h	2-3 h	below 2 hours	
	32	24.5	23.0	20.5	

The survey results of the research methodology showed that summarization of the previous teaching and working experience, literature review, experiment, observation were the common methods of doing study and research, while investigation and case study method were used not very often. 69.7% of the teachers preferred to write paper as the most important form of research results, 50% of teachers claimed that the Internet were the main way to obtain scientific information.

According to our study, unfortunately most subjects had little time and no time every week for reading books and academic journals, 43.5% of teachers agreed that they spend not more than three hours per week on reading

academic books, which were evident that teachers had too little time to improve the professional quality and self-charging.

5. Research management system and mechanism

Table 5 showed that 45.9% of respondents believe that the overall research work is a priority and had an important position in the school and 61.5% of teachers think that atmosphere of doing research was not good or poor. Research projects mainly from the teaching practice accounted for 55.7%, indicating that research in teaching should be the contents of a large proportion of scientific research in vocational college.

42.7% of the subjects thought they had less time or no time in research and, indicating that half of the teachers had heavy teaching load and had no energy and time to carry out scientific research, of course, in fact there were some teachers who have the energy but do not do not want to spend time engaging in scientific research.

TABLE V. INVESTIGATION FOR RESEARCH MANAGEMENT SYSTEM AND MECHANISM

Research status		Atmosphere		Sources		Time for research	
prior	0.8	very well	4.9	teaching practice	55.7	very sufficient	8.2
important	45.1	good	33.6	hot scientist issues	18.9	sufficient	18.0
general	36.0	general	41.0	from the superior level	13.9	general	31.1
inferior	14.8	inferior	19.7	personal interest	11.5	a little time	32.9
very poor	3.3	very poor	0.8			no time	9.8

As to the question of research management, 84% of vocational institutions had independent scientific management institutions, but 16% were non-independent research management institution, which were attached to other institutions and departments. When asked about the role of research and management institutions, only 27.1% of respondents thought it very helpful. 55.8% of teachers thought that the leadership attached less importance to scientific research and 42.6% of teachers thought that the incentives of scientific management system for teachers are very large and relatively large. Only 28.7% of teachers thought that investment in research were adequate or relatively adequate.

6. Survey on the scientific research achievements

TABLE VI. SURVEY OF RESEARCH ACHIEVEMENTS

course book		papers published		research projects		awards	
over 3	8.2	over 5	13.2	national	1.6	national	1.6
2	11.5	3-4	16.4	provincial	16.3	provincial	13.9
1	26.2	1-2	36.9	regional	10.7	municipal	12.3
0	54.1	0	33.6	school	23.0	no	72.2
				no	48.4		

Over the past five years, 8.2% of the respondents have been the editor in chief for more than 3times, 11.5% for 2 times, and 26.2% for one time. 54.1% of the teachers had no experience to write and compile the teaching materials.

13.2% of the respondents had their papers published in the formal, public offering of academic journals, newspapers more than five times, 16.4% only for 3 or 4times, 36.9% for one time, and 33.6% have not published any articles over the past five years.

Only 1.6% of the teachers took over national academic projects and got national awards, 16.3% of them provincial and ministerial academic projects; 13.9% received provincial and ministerial level awards; 10.7% of the teachers took over municipal academic research projects; 12.3% of teachers received the municipal awards; 23% of the teachers took over the school (School) level projects. But nearly 50% of teachers (48.4%) did not take over any research projects and 72.2% of the teachers never awarded.

7. The problems in scientific research

This part is the investigation results about the main problems in research work. The results showed that the major difficulties of teachers in vocational colleges at present were “seven lacks” - lack of time, lack of training, lack of atmosphere, lack of funding, lack of system, lack of orientation, lack of personal effort.

Firstly, 28.7% agreed that they had great pressure of teaching and had no time for doing research. According to the survey, the teacher-student ratio in most of the higher vocational colleges were serious disorder, with 54.9% of the teachers in classroom for over 16 hours a week, 11.5% of the teachers having 24-30 weekly classed. Because of teaching pressure, coupled with class management, it was very hard for most teachers to squeeze time for research.

TABLE VII. WEEKLY HOURS FOR TEACHING

Weekly hours for teaching	Frequency	Percent	Valid Percent	Cumulative Percent
over 24 classes	14	11.5	11.5	11.5
16-24classes	53	43.4	43.4	54.9
8-16classes	33	27.1	27.1	82.0
below 8 classes	22	18.0	18.0	100.0
Total	122	100.0	100.0	

In terms of weekly working hours, a Mann - Whitney U statistic test was made to test the regional differences. From the following table, there was significant differences in weekly teaching loads of Shandong, Jiangsu and Zhejiang provinces, with the 750.500 U statistic values, Z value equal to -2.260 , 0.024 of two-tailed significance probability. Because this value was less than 0.05, so there was a significant difference in weekly working hours between the two regions. However, there were no significant differences between the Northeast and Jiangsu and Zhejiang , between Shandong and Northeast regions.

Secondly, 24.6% agreed with the lack of theoretical guidance and training in doing research; 35.2% of teachers (see Table 4) lack the necessary understanding of research methods and procedures. Thirdly, 5.2% agreed that the research atmosphere were poor and 61.5% of teachers in vocational college complaint the lack of research team and poor research environment (see Table 5). Fourthly, 24.6% agreed that they lack funds, lack of laboratory equipment, experimental conditions and difficulties in getting adequate information. Fifthly, 3.4% thought that their research orientation were not set and clear, without the closely cooperation between colleges and enterprises. Sixthly, 2.4% thought scientific research and management lack sound and effective incentive system. Lastly, 1.6% admitted that they lack individual effort, scientific interest and confidence, and they didn't want to spend energy and time on doing scientific research.

8. Suggestions given by the subjects of the survey

To address the above problems, the teachers surveyed made the following recommendations: 27% agreed to strengthening research and training and expert guidance; 25.4% were for increase in research funding, 21.3% agreed to improving the scientific management and incentive system, 19.7% were for creating a strong atmosphere of scientific research; 6.6% agreed to overcome laziness and enhancing personal awareness. From the dispersion of the numbers, we can see the diversity of vocational teachers in research needs.

TABLE VIII. SUGESSTIONS FROM THE SUBJECTS

scales items	Frequency	Percent	Valid Percent	Cumulative Percent
Strengthen training	33	27.0	27.0	27.0
Increase funding	31	25.4	25.4	52.5
Improve incentive system	26	21.3	21.3	73.8
Create atmosphere	24	19.7	19.7	93.4
Overcome laziness	8	6.6	6.6	100.0
total	122	100.0	100.0	

The above data was made to reflect the real and current situation of scientific research in vocational colleges in the hope that they could give help to the teachers and administrators in vocational colleges nationwide to promote the overall development of academic research in these vocational colleges.

9. Conclusion

In order to solve these problems, the following strategies are proposed for the authorities and working faculty of vocational colleges:

- a) Provide enough research time.
- b) Strengthen training and expert guidance.
- c) Increase research funding.
- d) Improve the scientific management and incentive system.
- e) Create a good atmosphere of scientific research for the faculty.
- f) Set sound scientific research orientation.
- g) Overcome laziness and enhancing personal awareness of the importance of doing scientific research.

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