



Research on System Environment for Growth and Development of Young College Instructors—Taking China University of Geosciences Beijing as an Example

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ABSTRACT

Young college instructors have become an important force of college teachers in teaching courses and doing research, who play an essential role in promoting the development of high education. From the perspective of system environment for the growth and development of young college instructors, five parts closest to the growth and development of young college instructors, including the conditions of living, development, scientific research, orientation training and teaching, are analyzed to explain the current situation of system environment for the growth and development of domestic young instructors, based on the survey of teachers at China University of Geosciences, Beijing. Moreover, suggestions and opinions on system reformation on the growth and development of domestic young college instructors are also presented based on literature.

Keywords: high education, young instructors, growth and development, system environment

INTRODUCTION

The growth and development environment of young college instructors refers to the external and internal factors that directly or indirectly influence the growth of young college instructors, and the objective rules conforming to their general growth (Cui, 1997). With the continuously expanding scale of domestic colleges, the proportion of young instructors keeps increasing. According to the statistics, in 2005, teachers under 40 accounted for 65.23%, while teachers under 30 accounted for 29.32% (Zhu, 2011). Over the past ten years, young teachers have been playing more and more important roles in teaching and doing scientific research, which have now become the main force in teaching undergraduates (Mao, 2012; Zhang &

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State of the literature

- Studies on the growth and development of young college instructors have been made over the last several decades. The major research of these studies is to explore the different perspectives on how to improve the teaching quality.
- Identification of system environment becomes a prominent influencing element on the growth and development of young college instructors.
- Different ways have been used to make the research, but systematically quantitative analysis is needed to support the reasoning for further study.

Contribution of this paper to the literature

- The significance of the present study lies in its contribution to the literature with the critical review of the different system environments in some developed countries on the growth and development of college instructors.
- According to the study, four elements including living conditions, development conditions, scientific & research conditions, and teaching conditions are recognized as the key to influence the growth and the development of young college instructors.
- Taking the case of China University of Geosciences, the results of this study shows that there are several main issues ready for some improvement including housing system, welfare system, and promotion system.

Wang, 2012). At the meantime, the voice of system reformation for high education is rising (Marrero, Woodruff, Schuster & Riccio, 2010). How to create a better environment for young college instructors from the system perspective and how to exert the functions of young teachers in college reformation are getting especially important (Igonina, 2009).

Therefore, the paper investigated the training condition and the development system environment of young teachers at China University of Geosciences, Beijing, reviewed the systems for young college instructors in other domestic and foreign countries, and presented the ways of improvement on systems to help young teachers grow better, based on the full understanding of the process of the growth and development of young college instructors, and deep analysis on the dilemma and the constraints for the development of them.

LITERATURE REVIEW

British colleges and universities have established relatively comprehensive systems in policy guarantee mechanism, organization function, teacher development project, incentive mechanism, and evaluation system to ensure the quality of professional development of teachers at colleges and universities (Li, 2013; Reay, 2012). Universities in Germany insist on the unity of teaching and doing scientific research, and attach great importance to system construction and the improvement of teachers' research ability. Full-time instructors must have a PhD degree, and are divided into professors, assistant professors, cooperative instructors and special mission instructors. The appointment of a professor is separated from the evaluation; the responsibility system of professors is in common, and teaching assistant

posts are also widely adopted by Germany universities. As for young teachers, there is a special system like young professor system to guarantee they have the priority in project application, subject construction and other aspects besides federal government's funding support (Liu, 2015; Busher, Lawson, Wilkins & Acun, 2011).

The United States carries out a Five-year Plan for College Instructors Development, which divides the first six years of a college instructor's career into three phases. In the first phase, the last year before graduating from PhD, Postgraduate Pipe Project will be carried out, mainly to help them to acquire the qualification as a college instructor. In the second phase, the first working year of a young teacher, the Fresh Teachers' Training Project will be carried out. In the third phase, the second to fifth years of a college teacher's teaching career, more training projects will be carried out, with the combination of supervisors and guidance from qualified senior teachers to help young teachers' development. (Mao, 2015; Korkmazi, 2013).

These foreign studies mentioned above mainly summarized the systems and experiences of several developed countries, like Britain, Germany and the United States, and found the system environment becomes a prominent influencing elements on the growth and development of young college instructors (Graf, 2009; Jurges & Schneider, 2008; Im, Yoon & Cha, 2016). However, the developing conditions faced up by young college instructors in China are more complex (Chen, 2007; Chen, 2010).

In addition to the individual efforts, the internal environment of colleges or universities including working environment, humanity environment, and policy environment, is also closely related to a young college instructor's growth (Zhu, 2011). The environment factors can be categorized into social environment and college environment. The latter can be subdivided into interpersonal environment, policy environment, working environment and living environment (Zhang, 1995).

The strict requests of educational background, profession evaluation, elimination system, annual evaluation, and performance evaluation of bonus-penalty in colleges, bring a lot of pressures to young college instructors (Ossenbach & Boom, 2011). Moreover, the pressures from economy, psychology, teaching and scientific research, professional promotion, and the inaccurate self-definition become the major factors influencing the development of young college instructors (Wang, 2013). Statistics shows that less than one third of teachers feel healthy, while more than a half is in sub-healthy (Ma, 2010).

These studies found the system environment becomes a prominent influencing elements on the growth and development of young college instructors, but didn't systematically conclude how system environment influences the growth of young college instructors. Moreover, the suggestions and opinions also needed data support. These questions are to be further studied in the paper.

Table 1. Cronbach α coefficient reliability test on questions based on Likert Scale (1 to 5)

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.938	.938	25

Table 2. Cronbach α coefficient reliability test with the basic information of the respondents

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.889	.882	39

METHODS

To guarantee the applicability of the research, a test survey was designed and sent out to 50 instructors in different professions, different ages and different posts. According to the feedback, parts of questions were eliminated and revised, and twenty-five multiple-choice questions were structured by Likert Scale (1 to 5) with seven multiple-answer questions, and two subjective questions.

The survey includes two sections. Section One investigates the personal information of respondents, including 7 questions like gender, age, educational background, academic titles, marital status, job titles, and monthly income. Section Two investigates the present situation and expectations for the system environment of the growth and development of young college instructors, including the conditions of living, development, scientific research, orientation training and teaching. Up to 450 surveys were anonymous sent out, and 395 were examined available for data analysis, with 88 percentage of collection rate.

SPSS19.0 was used to test the Cronbach α reliability coefficients on the questions based on Likert scale. Cronbach α coefficient is 0.938 shown in **Table 1**, based on the 82.8 percent of effective respondents. Cronbach α reliability coefficients reexamination was made after the inclusion of the basic information of the respondents, Cronbach α equaling to 0.889 was got based on the 65.1 percent of effective respondents shown in **Table 2**. Both of the test results were greater than 0.65, indicating that the reliability level of the survey is good.

Furthermore, KMO and Bartlett's tests are made on the questions by Likert Scale (1 to 5) and the basic information of the respondents to get the KMO value, $0.886 > 0.6$, and the corresponding Bartlett's Test chi-square value $P = 0.000$, shown in **Table 3**. The test results show excellent construction validity of the survey, indicating that it is suitable to make factor analysis on the survey data.

Table 3. KMO and Bartlett's validity test on questions by Likert Scale (1 to 5) and basic information of the respondents

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.886
	Approx. hi-Square	5518.427
Bartlett's Test of Sphericity	df	741
	Sig.	.000

RESULT AND ANALYSIS

Demography of Investigated Instructors

Among the respondents, 58.2 percent of the respondents are male, while 41.8 percent are female; 88.3 percent are married, while 11.7 percent are unmarried; 64.3 percent of the respondents are under forty years old, while 10 are under thirty and 53.4 are between 30 and 40. For their educational background, 76.3 percent of them already have or are chasing for a PhD degree, 18.7 are having or chasing for a Master's degree. For the professional title shown in **Table 4**, 46.9 percent are lecturers, and 34.9 percent of associate professors, 13 percent of professors, and 5.2 of assistant professors. Especially, instructors under 40 accounts for 97.4 percent of the assistant professors, 62.8 of the lecturers, 27.8 of the associate professors, but there are only 4 professors under forty, which accounts for only 10 percent of all the professors on campus.

Overall Situation of Investigation

As shown in **Table 4**, some of the most unsatisfactory items of the conditions of living, development, scientific research and teaching are listed in descending order, to present an overall evaluation on instructors' development system environment.

59.5 percent of the respondents are not satisfied with the housing allocation system; 50 percent are not satisfied with the implementation on their suggestions. Moreover, there are 5 items with more than 40 percent of dissatisfaction by the respondents, including current income, monthly income for fresh instructors, working environment, evaluation and promotion system, and their weekly workload of teaching in descending order.

On the contrary, the most satisfied items from the respondents include the normative management on scientific research, initial funding on scientific research for young instructors, sufficiency and justice on the chances of visiting or training abroad for young instructors, and the effectiveness of orientation training for new instructors. Over 45 percent of the instructors show satisfactions on above mentioned items.

Table 4. Overall evaluation on system environment of investigated instructors

	Items Related to Growth and Development in the system	Unsatisfactory	Satisfactory	Neutral (%)
Living Conditions	Housing allocation system	59.5	10.2	30.3
	Initial monthly income of new instructors	45.2	12	42.8
	Current income	44.5	15	40.5
	Welfare and bonus	38.3	21.3	40.4
Development Conditions	Implementation on suggestions	50	12.8	37.2
	Evaluation and promotion system	43.1	33.4	23.5
	Justice of professional title appointment	32.6	35.3	32.1
	Personal advanced study or training Opportunities	28.7	35.3	36
	Visiting or training abroad	28.3	31.5	40.2
	Financing support on training abroad	24.4	41.8	33.8
	Sufficient chances of visiting or training abroad	23.4	39.2	37.4
Scientific Research Conditions	Justified opportunities of visiting or training abroad	21	48.4	30.6
	Normative management on scientific research	13.5	53.9	32.6
	Scientific research atmosphere	18.3	47.2	34.5
Teaching Conditions	Initial funding on scientific research for young college instructors	19.2	48.8	32
	Working environment	45.1	20.2	34.7
	Weekly teaching load	41.1	16.3	42.6
	Equipment condition for teaching in classroom	21.3	39.5	39.2

Detailed analysis on survey

Living Conditions

Living conditions is the most unsatisfied aspect by the respondents. Poor housing condition and salary are the top two aspects receiving the strongest complaint. 59.5 percent of the respondents are not satisfied with the housing allocation system, and 30.9 percent of them are still renting apartments. Moreover, 44.5 percent of the respondents are not satisfied with their current income, and 76.9 percent of them think a fresh instructor should earn 7000 RMB or more a month.

Development Conditions

Investigated instructors generally feel satisfied with chances of visiting or training abroad, but strongly unsatisfied with the implementation on their suggestions, nor with the post evaluation and promotion system. Each of the five criteria, including the number of published books, awards on projects, experience of visiting scholar abroad, the number of

national scientific research grants, and awards on teaching, on being promoted to professor, received 77.8%, 61.2%, 57.6%, 33.6% and 11% higher support respectively compared to the promotion to associate professors.

Scientific Research Conditions

Scientific research conditions are the aspect receiving the most satisfactory opinions at China University of Geosciences, Beijing. 64 percent of the respondents support the encouragement on young college instructors to do scientific research. And nearly a half of the respondents are satisfied with the normative management and initial funding on scientific research. However, 42.5 percent of the respondents suggest that a hundred thousand RMB would be the best initial funding on scientific research for young instructors.

Teaching Conditions

Most investigated respondents feel unsatisfied with the teaching conditions. Except for teaching equipment receiving general satisfactions, 45.1 percent and 41.1 percent of the respondents are not satisfied with the working environment and the workload of teaching respectively. Moreover, more than a half of them suggest the teaching load be five to eight hours per week.

Summary of Young Instructors

The overall situation of young college instructors shows the coherence with all other faculties, but showing obvious differences in following aspects.

Living Conditions

85 percent of the respondents earn 5000-10000 RMB a month, in which 69.3 percent are no older than 40. Among those who are unsatisfied with the payment, young instructors under 40 accounts for 68 percent, nearly 29 percent of all the respondents. Moreover, 88.9 percent of the young instructors earning below 5000RMB are under forty years old, while 72.9 percent of the instructors earning more than 10000RMB are over forty. No instructors under 30 can earn more than ten thousand, while no instructors under 40 can earn more than thirteen thousand RMB. From the above mentioned information, the income of young instructors is not satisfactory. For the instructors between 25 and 40, they are facing up with lots of pressures from the society, family, and work. They need more income to cover the fees for kids to go to kindergarten, to pay for the installment, to do social networking, but the low income makes them distracted from the teaching and scientific research.

76.9 percent of the respondents consider that the initial salary of a new instructor should be over seven thousand RMB, and two third of the instructors who are totally unsatisfied with the housing allocation system are under 40, as shown in [Figure 1](#). Moreover, as indicated in survey results, there is great difference between the salaries for young instructors and for the seniors, which makes the young instructors the major group unsatisfied with their payment and housing condition. The younger, the more unsatisfied.

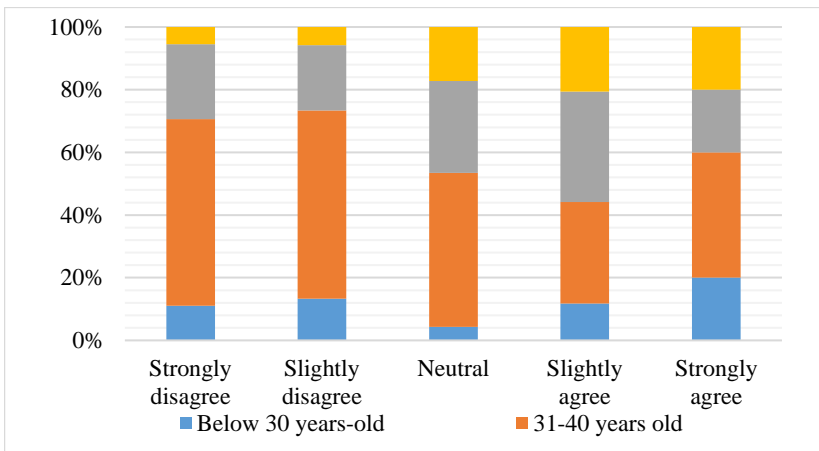


Figure 1. Satisfaction degree on housing allocation system of instructors at different ages

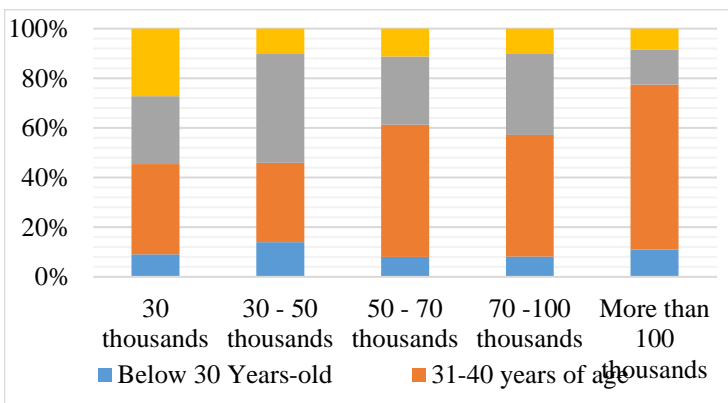


Figure 2. Satisfaction degree on housing allocation system of instructors at different ages

Development Conditions

As shown in survey results, the satisfaction rate on chances of training abroad provided by the university keeps decreasing with the age of the instructors growing, but decreases when the age is over 51, which indicates that young instructors have no high demands on training abroad, while senior instructors around 40 to 45 years old expect overall promotion and further training, but needs a stable life after over 50.

Scientific Research Conditions

As shown in **Figure 2**, 43 percent of the respondents think that the initial scientific research funding for young instructors should be over 100 hundred RMB, among whom 46 percent of supporters are under 30 and 52 percent are at their thirties, indicating a strong expectation for more initial funding on scientific research by young instructors, especially those at their thirties. Since they are not qualified enough at their scientific research abilities,

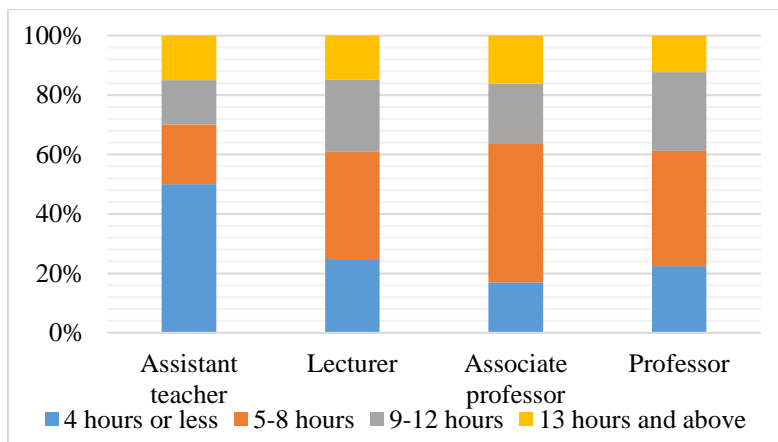


Figure 3. Average weekly workload of instructors with different professional titles

young instructors hardly receive supports from scientific funding or grants and other projects from companies, which makes them have higher expectation on initial funding from universities.

Teaching Conditions

As shown in **Figure 3**, 34 percent of the respondents under 30 teach no more than four hours of classes a week, and 43 percent of the respondents at their thirties teach five to eight hours of classes a week. Half of assistant professors teach no more than four hours of classes a week, while 45 percent of assistant professors think 9-12 hours of classes a week would be the best, and 55 percent of lecturers, 48 percent of associate professors and 52 percent of professors think 5-8 hours of classes a week would be the best.

Most of the young instructors under 30 show great enthusiasm on their work, and wish to have more teaching workload. However, due to the limited amount of courses, and most of the courses have already been occupied by some seniors who also need the course for workload evaluation, the young instructors couldn't get more courses to teach.

As for the working environment on campus, only 2 percent of the respondents are totally satisfied. In particular, more than 15 percent of the respondents under 30 are pleased with their working environment, but no more than 10 percent of other instructors at other ages are pleased with that, and the older, the more unsatisfied.

Orientation Training Conditions

Although 85.6 percent of the respondents agree the necessity of orientation training, and two third of whom are under 40, there's only 9 percent of them are under 30, while others are at their thirties, showing that the new instructors under 30 don't care too much about the training at all. One reason is that they don't agree enough on the contents or the effects of the training; the other reason is that, the young generation make great progress on this aspect, and

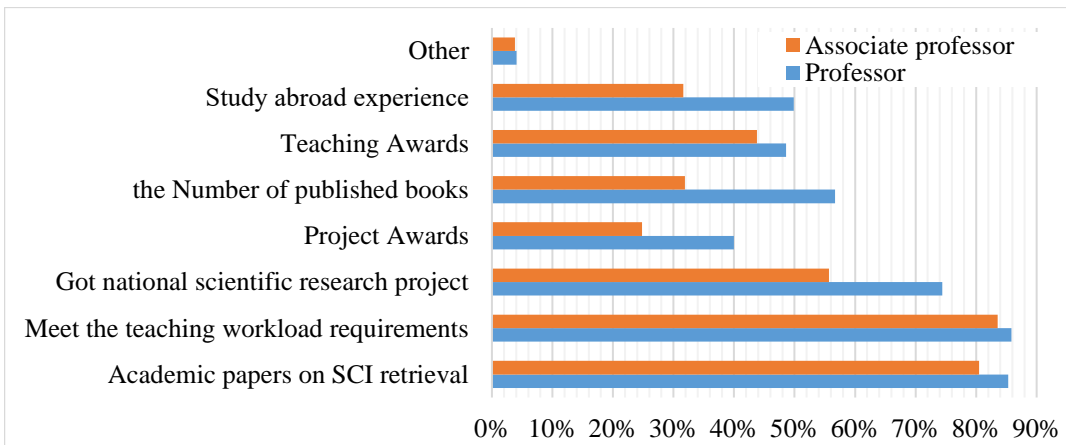


Figure 4. Requirement comparison on professional promotion between to associate professors and to professors

don't need so much training. However, it is the required step for the employment, and they have no way to change the current situation.

Other Important Findings

Promotion Requirements

The top 5 requirements of the professional promotion to an associate professor ranked by most of the respondents are: the accomplishment on teaching tasks, number of papers indexed by SCI or SSCI, number of national scientific grants, awards on teaching, and number of books published. And the supporters for each item account for 83.5%, 80.5%, 55.7%, 43.8% and 31.9% respectively.

As for the professional promotion to a professor, the top 5 requirements are: the accomplishment on teaching tasks, number of papers indexed by SCI or SSCI, number of national scientific grants, number of books published, and visiting scholar experience abroad, and the supporters of each of which account for 85.8%, 85.3%, 74.4%, 56.7% and 49.9% respectively.

Compared to the professional promotion requirements to professors with that to associate professors, the top 5 items to be considered are: number of books published, awards on projects or grants, visiting scholar experience abroad, number of national scientific grants, and awards on teaching.

However, these findings are different with the current promotion evaluation system, shown in **Figure 4**. The current professional promotion evaluation ranking order are: national scientific grants, and number of papers indexed by SCI or SSCI, while two items including the accomplishment on teaching tasks and visiting scholar experience abroad, are not taken into consideration at all.

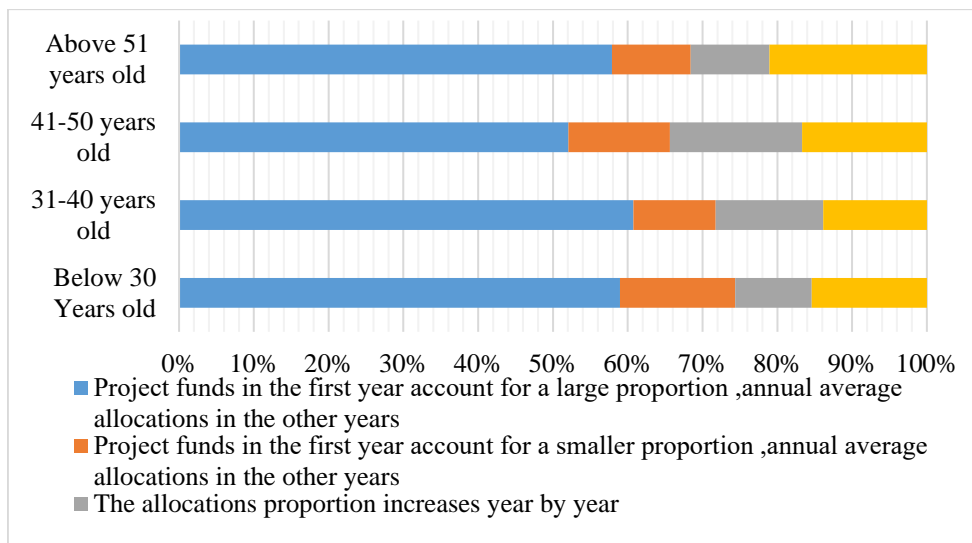


Figure 5. Reasonable appropriation mode of initial scientific funding for young instructors on scientific research

Scientific Researching Conditions

As shown in **Figure 5**, 57.7 percent of the respondents agree that a bigger proportion of funding is appropriated on the year the grants or the projects set up, and then the rest are appropriated evenly on the other years. The supporters are over a half of the respondents, far more than other modes on appropriation.

CONCLUSION

According to the research, young college instructors are facing up with lots of pressures in both life and work, including such realistic problems as high expenditures on kids' education, few savings and low income, living at marriage or pregnancy phase, and the systematic or regional factors like household registration and high price level. Moreover, young instructors also have high pressures on scientific research, performance evaluation and professional promotion at work, due to the reasons of imperfect teaching and research ability, unstable teaching and research planning, lower professional title, and little voices on professional promotion evaluation and teaching arrangement.

With the great attention on education paid by China and all the relevant ministries and committees, various kinds of initiation planning on scientific research and been talents development have been carried out, so that the support intensity on scientific activities and instructor training is enhanced, which is the reason why the instructors in the survey are generally satisfied with training abroad and scientific research environment.

In conclusion, there are three main issues needing some improvement on the system environment for the development of young college instructors as follows: Related systems to

guarantee the basic living conditions of young instructors. Firstly, the housing system, including the current housing allocation system, the initial setting-in allowance, and the housing allowance system, couldn't satisfy the needs of young instructors yet. Secondly, the welfare system, including the current income distribution system, the professional title evaluation system, and allowance system needs to be improved to satisfy the realistic expectations of young instructors. Teaching conditions and more inclination on young instructors need to be improved. The working environment for the faculties and the adjustment on the workload of young instructors, especially for the assistant professors to have more courses to teach, need some improvement. More attention on suggestions from young instructors and the adjustment of professional promotion system to make it applicable for different varieties should be made. Positive replies and implementations on suggestions and opinions from young instructors should be given, and the relatively adjustment on the appointment and promotion system should be taken into concern. More appropriation on the initial scientific funding for young instructors, and more effective and realistic orientation training for new instructors should be designed.

Since the survey is only confined in China University of Geosciences, Beijing, the results are not so typical to stand for all universities of the whole China. For example, the influence of living conditions, especially the payment and housing issues have been enlarged, due to the location in Beijing, and the working environment has been deeply influenced, with the decreasing utilization area after several relocations. As the survey is mixed with different types of questions, the limitations of Excel and SPSS on the analysis and examination of objective and multiple answer questions partly influence the accuracy of the result.

Moreover, further research should be made to make the research more deeply and abundantly besides the limitation above mentioned. The hidden factors of systems in different levels and different types should be concluded systematically to provide more reliable data by calculating the influence of every factor mathematically, in order to provide convincing statistics. More data from other colleges in other regions should be collected to examine and find out the common problems in the system environment of the growth and development environment for young instructors.

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