



# A Model of Harmonious Guidance Relationship Based on the Extracurricular Interaction Mechanism between Mentors and Students

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## Abstract

The guidance relationship between mentors and graduate students affects the quality of graduate training. An empirical study was conducted for graduate students in a double-class university in China to establish the mechanism of extracurricular interaction between mentors and students in three dimensions: interaction style, personal ability and institutional environment. The quantitative analysis results of chi-square test and logistic regression were used to derive the relevant influencing factors of guidance relationship, so as to construct an education model of mentor-student extracurricular interaction from three dimensions: single-single, single-multiple, and multi-multiple, and effectively improve the relationship between mentors and students.

**Keywords:** *Extracurricular Interaction Mechanism; Guidance relationship; Model*

## 1 INTRODUCTION

In the process of graduate education, the mentor is the first person responsible for graduate education, and the guidance relationship between him and the graduate student is one of the most important relationships in the study and life of the graduate student. With the expansion of graduate enrollment scale in China and the increase of the number of graduate students under the guidance of mentors, the quality of graduate education has attracted increasing attention from all walks of life. The guidance relationship between mentors and graduate students has a profound impact on the quality of graduate education, so it is very important to establish a harmonious guidance relationship.

## 2 THE SIGNIFICANCE OF IMPROVING THE QUALITY OF GRADUATE EDUCATION THROUGH EXTRACURRICULAR INTERACTION BETWEEN MENTORS AND STUDENTS

Extracurricular interaction between mentors and students refers to the communication behavior between professional mentors, counselors or other staff and students in various forms of activities outside the first class, which is used to shorten the distance between mentors and students, promote the communication between mentors and students, enhance the understanding between mentors and students, and promote the benign development of the guidance relationship between mentors and students. As a concrete measure in the process of talent training in universities, the extracurricular interaction between mentors and students is of great significance to improve the quality of graduate education.

On the one hand, graduate teaching guidance is essentially an interactive process, and the effectiveness

of interaction is directly related to the quality of graduate training. Teaching is a kind of practice that combines the cognition of the objective world with the promotion of the subjective world. The interaction between mentors and students based on this is mainly a kind of communication and interaction of knowledge, emotion and intention. In teaching activities, they take mentors as the subject of practice. Based on their own life world, mentors and students take language and culture as the communication medium, and conduct mutual behaviors under common rules and norms. Some scholars have mentioned the importance of a good guidance relationship on the academic success of doctoral students by establishing a behavioral model of interpersonal relationship management, and pointed out the influence of interpersonal style on the guidance relationship [3]. Some took 1246 doctoral students from the University of Massachusetts as samples, and through the difference analysis, they found that in the process of getting along with students, apart from the status of educator, the other roles that mentors play -- the way of interaction between mentors and students -- had the greatest influence on the quality of graduate education [4].

On the other hand, extracurricular interaction expands the channels for the establishment of the guidance relationship, and the interaction between mentors and students helps to promote a good guidance relationship. For graduate education, it is mainly a combination of mentor guidance and student self-study. The mentor and his students have less time to communicate in class, and there is more interaction after class and in the process of doing research and scientific projects. The cultivation and education of the graduate students by the mentor is not a process in which the mentor suppresses and transforms the graduate students, but a process in which both sides cooperate and communicate equally. Therefore, the ideal relationship between supervisors and postgraduates is to realize an equal and democratic communication between subjects. Some scholars selected 134 graduate students from an Australian university as the respondents, and explored the great differences brought by their different psychological states in getting along with their mentors and different training effects for graduate students [2]. There are also some scholars that explore the supposed relationship between mentors and students based on the mentor's unilateral perspective. For example, they through interviews with 25 model doctoral supervisors, clarified that effective guidance is complex rather than a formula,

and attention should be paid to both the perceptual level and the rational level. At the same time, we should pay attention to comprehensive development, focus on the intellectual dimension and emotional dimension together, and create an imitable learning guidance relationship [1].

It can be seen from scholars' research that the guidance relationship is the core of the relationship between mentors and postgraduates, and an important factor affecting the quality of postgraduate training. Meanwhile, the interaction between mentors and students directly affects the construction of a good guidance relationship. In general, the growth of students has both rational cognitive needs and emotional demands, and they need to enhance professional knowledge and skills as well as improve interpersonal skills. Human development can only be realized in the process of communication. Communication here is a two-way interaction between subjects, which follows intersubjectivity and is based on the equal status of both parties. The interaction between mentors and students after class provides a platform for mentors and students to exchange ideas and improve relationship. At the same time, it creates an environment where the differences between the two groups in the classroom can be set aside and mentors and students are encouraged to interact as friend. In this process, students are cared about to meet their emotional needs and develop their interpersonal skills.

### 3 THE EMPIRICAL ANALYSIS OF IMPROVING THE QUALITY OF POSTGRADUATE EDUCATION THROUGH EXTRACURRICULAR INTERACTION BETWEEN MENTORS AND STUDENTS

Starting from the level of interpersonal interaction, this study aims to promote good relationship construction through extracurricular interaction, and improve the effectiveness of research conclusions through quantitative research. This research mainly adopts questionnaire survey, and the questionnaire structure is divided into three parts: sample background information item, sample basic status item and sample basic attitude item, which assumes that the three dimensions of mentor-student communication style, personal ability and institutional environment will influence the guidance relationship (Table 1).

**Table 1:** Level-3 indicators of guidance relationship questionnaire survey.

Primary Index	Secondary Index	Tertiary Index
Guidance Relationship	Overall Evaluation	Close
		General
		Tension

Mutual Evaluation between Mentors and Students	Hostile	
	Great Pressure of Scientific Research	Mentor
	Worry about Students' Psychological Problems	
	Forcing Students to Participate too much in Research	
	Great Pressure on Study	Student
	Heavy Task of Research	
	Limited Mentor Guidance	
	Afraid to Communicate with the Mentor	
	Strict Management by Mentors	
	Disparity between Effort and Reward	
Objective Environmental Factors	Teaching Level	
	Management Level	
	Ethical Level	

### 3.1 Basic Information of the Questionnaire Research

This study conducted a questionnaire survey on the relationship between the graduate students of the School of Mechanical and Electrical Engineering in UESTC. The survey received 468 valid questionnaires, with a valid recovery rate of 93.8%, which is statistically significant. The sample comprehensively covers students of different grades, genders, and admission mode (Table 2).

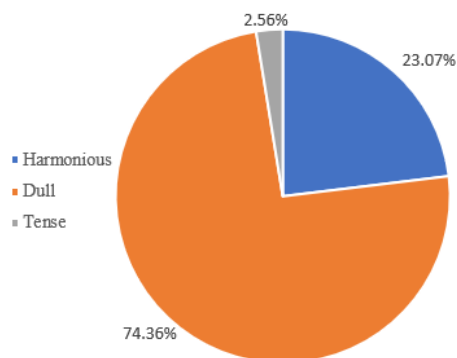
**Table 2:** Questionnaire sample distribution.

Category	Type	Quantity	Ratio
Gender	Male	301	64.32%
	Female	167	35.68%
Grade	Grade 1 master	198	42.31%
	Grade 2 master	177	37.82%
	Grade 3 master	93	19.87%
Admission mode	Test free recommendation	214	45.73%
	Admittance by examination	254	54.27%
Training mode	Non-directional	442	94.44%
	Atudaim	26	5.56%

### 3.2 Questionnaire Survey and Current Situation Description of Guidance relationship

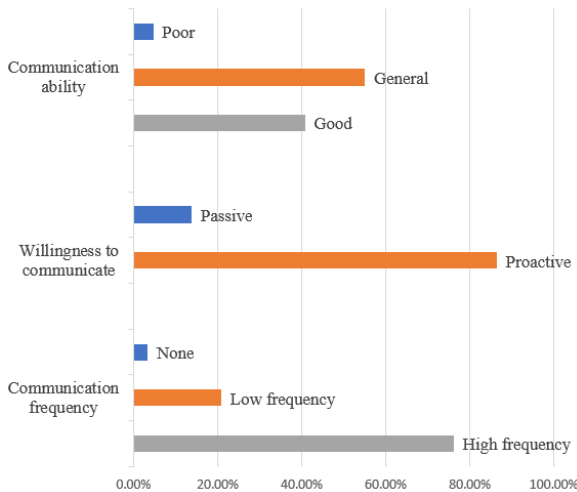
The survey results show that 74.36% of the students have a harmonious relationship with their instructors, 23.07% have a dull relationship with their instructors,

and 2.56% have a tense relationship with their instructors. The current guidance relationship is generally harmonious (Figure 1).



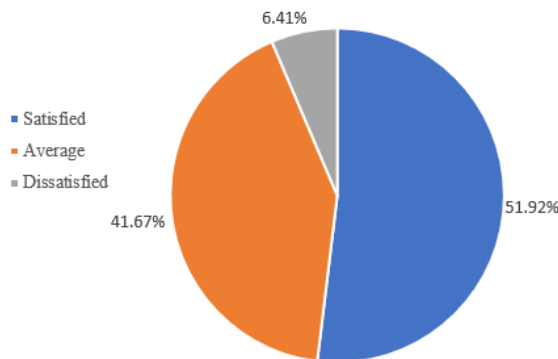
**Figure 1:** Current status of guidance relationship.

In terms of communication frequency between mentors and students, 76.06% of students have more contact with mentors, 20.73% have less contact with mentors, and 3.21% have almost no contact with mentors. As for the willingness to communicate, more than 80% of the students think that they should communicate with mentors more often, and 86.31% of them are willing to take the initiative to communicate with mentors. In terms of personal ability, 40.60% of the students have good communication ability, 54.91% have average communication ability, and 4.49% have poor communication ability. More than 90% of the students believe that good communication ability is important for their growth (Figure 2).



**Figure 2:** Communication situation of mentors and students.

In terms of environmental system, more than 70% of the students expressed their willingness to participate in various activities carried out by their schools and colleges. For the college's recognition of teaching and management, the proportion of students with satisfied, average and dissatisfied attitude was 51.92%, 41.67% and 6.41% respectively (Figure 3).



**Figure 3:** Evaluation of environmental system.

As for the ideal guidance relationship, 72.86% of the above situations reflect that the vast majority of students hold a positive attitude towards the communication between mentors and students, but fewer are willing to take the initiative to contact mentors. At the same time, almost all students think that good communication skills are very important for their future development. In addition, the willingness of students to participate in activities is relatively high. It can be seen that there are certain realistic conditions for extracurricular interaction

between mentors and students, which is a positive response to the needs of students.

### 3.3 Analysis of the Main Factors Affecting the Guidance relationship

According to the frequency statistics of the above questionnaire survey results, it is necessary to screen out the closely related aspects with the status of the guidance relationship, and conduct a difference study and variable correlation study on the relevant data, so as to determine the main factors directly affecting the harmonious guidance relationship. Firstly, five variables were selected as research variables: "state of guidance relationship", "frequency of communication between mentors and students", "communication ability" in the basic status, and "willingness to communicate with mentors" and "recognition of teaching and management of the college" in the basic attitude. Secondly, the Chi-square analysis is conducted to study whether sample groups in different status of guidance relationships in reality, namely harmonious, flat and tense relationships with mentors, are different in the four aspects of basic status and basic attitudes. Thirdly, binomial logistic regression analysis is carried out to re-divide the status of guidance relationship in reality into two categories: "harmonious relationship" and "bland or tense relationship" as dependent variables, and the rest as independent variables. A logistic regression model is established to determine the influence relationship between independent variables and dependent variables.

Table 3 is the statistical table of chi-square analysis results of the relationship between each research variable and the state of learning guidance. There are extremely significant differences between "mentor-student communication frequency" and "communication ability" and "state of guided learning relationship" (Sig.<0.001), and very significant differences between "willingness to communicate with mentors" and "state of guided learning relationship" (Sig.<0.01). There was no significant difference between "recognition of college teaching and management" and "status of guidance relationship" (Sig.>0.05). It can be seen that differences in communication frequency between mentors and students, differences in students' communication ability, and differences in students' willingness to actively communicate with mentors will all bring about different states of guidance relationship, while differences in recognition of school learning and management will not obviously cause differences in guidance relationship.

**Table 3:** Chi-square analysis results of research variables.

Project		Number of Samples(N)	Relationship between Mentors and Students(n)			Difference	
			Harmonious	General	Tension	Likelihood Ratio	Sig.
Communication Frequency	More	356	268	86	2	58.917	0.000
	Less	97	74	22	1		
	Hardly	15	6	0	9		
Willingness to actively Communicate	Active	327	243	81	3	10.999	0.004
	Passive	141	95	37	9		
Communication Skills	Preferably	190	153	44	0	71.307	0.000
	General	257	192	58	2		
	Less	21	3	8	10		
Recognition of the College	Satisfied	243	176	60	7	6.568	0.161
	General	195	154	38	3		
	Dissatisfied	30	18	10	2		

Through the correlation of the independent variables selection, finally selected linearly independent "frequency of communication between mentors and students" and "communication ability" as the independent variable, to split into "relationships" and "flat or tension between" two classification learning relationship status as dependent variable, to explore the influence of different independent variable on the dependent variable and the correlation degree, the binomial logistic regression analysis, The results are shown in Table 4. Among them, the P value obtained by Hosmer-Lemeshow test is 0.061 greater than 0.05, indicating that the real situation is close to the predicted situation. The Sig. of each influencing factor is less than 0.05, indicating that these factors have an obvious influence on the status of the guidance relationship. In terms of communication ability, "poor communication ability" was taken as the benchmark reference item, and the B values of "relatively good communication ability"

and "average communication ability" were both greater than 0, indicating that students with good communication ability compared with those with poor communication ability, In the process of communicating with mentors, students are more likely to get along with each other harmoniously. In addition, the logarithmic ratio Exp (B) of "good communication ability" and "poor communication ability" is 23.735, indicating that the former is 23.735 times more likely to get along well with mentors than the latter. A similar conclusion can be drawn when it comes to frequency. The more communication between mentors and students, the more likely to achieve a harmonious relationship between mentors and students; In addition, compared with "relatively high frequency of communication" and "almost no frequency of communication", the possibility of harmonious relationship between mentors and students is 10.162 times.

**Table 4:** Summary of binomial logistic regression analysis results.

Variable	B	S.E.	Wald	Degree of Freedom	Sig.	Exp(B)
Communication Skills: Less	-	-	26.519	2	0.000	-
Communication Skills (1): Preferably	3.167	0.616	26.465	1	0.000	23.735
Communication Skills (2): General	2.753	0.572	23.151	1	0.000	15.694
Communication Frequency: Hardly	-	-	12.526	2	0.002	-
Communication Frequency (1): More	1.208	0.611	3.908	1	0.048	3.347

Communication Frequency (2): Less	2.319	0.711	10.642	1	0.001	10.162
Constant	-3.051	0.824	13.714	1	0.000	0.047
Hosmer-Lemeshow Test	5.596(0.061)					

From the empirical analysis results, it can be seen that the frequency of communication between mentors and students and the communication ability of students are the main factors affecting the harmonious guidance relationship, and both of them are positively correlated with the harmonious guidance relationship. Therefore, the extracurricular interaction between mentors and students can increase the frequency of communication between mentors and students and improve students' communication ability, so as to build a harmonious guidance relationship, avoid the tension of guidance relationship to have a negative impact on educational work, promote the smooth progress of educational work, and obtain statistical support.

#### 4 CONSTRUCTION OF A MODEL OF EXTRACURRICULAR INTERACTION MECHANISM BETWEEN MENTORS AND STUDENTS

Based on the empirical research and with reference to the non-directive theory proposed by Carl R. Rogers, the author's college has constructed a model of extracurricular interaction mechanism between mentors and students (Figure 4).

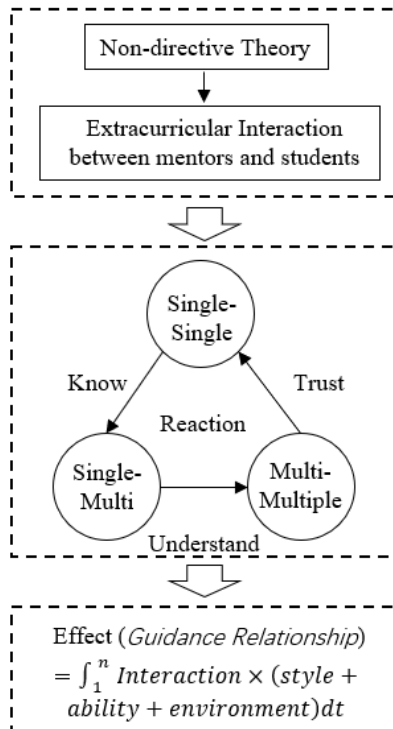


Figure 4: Model of extracurricular interaction mechanism.

#### 4.1 Single-Single Extracurricular Interactive Education Model

This interactive education mechanism refers to the one-to-one communication mode between individual mentors and individual students after class. The communication content involves many aspects, such as thought, emotion, study, life and psychology. It has three characteristics.

Firstly, it is highly targeted. One-to-one interaction between the mentor and the students to solve their problems according to the needs of different types of students. For example, we provide professional knowledge guidance for students with strong academic and scientific research expertise, all-round tracking of students who need special attention in their study and life, and care and help students from poor families. Secondly, it has strong sustainability. From the beginning of students' enrollment, the college has carried out characteristics locking through a series of ways, arranged suitable mentors to guide and help students throughout the whole process of college life, and constantly adjusted and optimized guidance measures with the needs of students in different growth stages. Thirdly, the interaction is profound. Because of the interaction between individuals, with the progress of communication between mentors and students, students' sense of trust and identity to mentors will be constantly strengthened, and they are willing to take the initiative to share their troubles with mentors. Mentors' understanding of students gradually deepens, and they can truly grasp students' ideological dynamics and better help students grow.

In specific measures, optimize the student management system and "mentors and students all the way" activities. We screened out students with financial difficulties and lack of confidence from the students who received financial aid every year, and established special communication channels with them to help them solve various problems in their study and life and promote their growth.

#### 4.2 Single-Multi Extracurricular Interactive Education Model

The educational link of the first class is often limited to the theoretical indoctrination of the mentor unilaterally. The establishment of this interactive education mechanism avoids the phenomenon of one-way indoctrination. Through the communication between mentors and students in the relaxed atmosphere outside

the classroom, it is easier for mentors to guide the ideological value of students. The extracurricular interaction based on this mechanism has the characteristics of broad topics, active atmosphere and large audience.

On the one hand, unlike in the first class, the mentor is the absolute authority in a specific field. In extracurricular interactions, the content of communication is not limited to professional knowledge, but covers a wide range of topics, ranging from the explanation of party and national policies to trivia in personal life. On the other hand, this kind of interaction is conducted in a relaxed environment, which is helpful for students to timely feedback their doubts to the mentor and get further explanation, and the guiding effect is remarkable. At the same time, there are many students in the mentor-student one-to-many mechanism, and the ideological value can be guided to cover all student groups through a sufficient number of related activities.

In terms of specific measures, the "Mentor-Student Luncheon" activity was launched to create a mentor-student communication platform during lunchtime. mentors and students sit around the table as friends, with a warm lunch, discussing and exchanging ideas in a relaxed atmosphere. In the activity, mentors and students express their opinions in an equal position, learn from each other's ideas, strengthen the thought exchange between mentors and students, and promote mutual understanding.

### **4.3 Multi-Multiple Extracurricular Interactive Education Model**

The communication mode between mentor group and student group constitutes the core of this multiple extracurricular interactive education mechanism, which has the characteristics of unity of purpose, unity of hobbies and in-depth communication.

Unity of purpose means that both groups participate in such activities to enhance mutual understanding and increase the connection between mentors and students. The unity of hobbies means that the theme of such activities is the content that both groups are interested in, as a medium to connect the two. In-depth communication means that both mentors and students are good at a certain interactive content, and both sides can learn from each other in the interaction. Therefore, the form of this kind of interaction is relatively open, which can involve various aspects such as culture, sports and art. At the same time, a platform is created based on a topic that both mentors and students are interested in, and based on the commonalities of the two, so that they can form an internal group promoting mutual identity and the harmonious development of the relationship.

Specifically, the "Sword Debate between mentors and students" sports meet is based on this mechanism to carry

out the intellectual or physical sports competition between mentors and students. mentors and students compete equally in the same kind of games that they like, and the competition serves as a link to draw the distance between mentors and students.

## **5 CONCLUSIONS**

Good guidance relationship will be conducive to the improvement of the quality of postgraduate education. This study, through quantitative research which provides analysis results, proves that the extracurricular interaction mechanism between mentors and students can effectively optimize the guidance relationship, and mentor-student communication style, personal ability, institutional environment will deeply influence the guidance relationship. Base on it, mentors and students participate in extracurricular activities, along with the construction of harmonious guidance relationship, pushing the education work in universities forward.

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