A Survey of the Effectiveness Model of College English Teachers' Classroom Discourse Based on Computer Assisted Technology from the Perspective of Speech Act Theory

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Abstract. Questioning in classroom is a part of the teachers' discourse and one of the most frequent and essential teaching skills used by teachers. Questioning can promote thinking, emphasize key points, stimulate engagement, control and test the learning situation of students. Questioning by teachers in classroom is different from that in our daily conversation. The purpose is not just to acquire information but to achieve pragmatic purposes at a deeper level. Hence, questioning by teachers is essentially a speech act with the specific pragmatic characteristics. This article uses the speech act theory, the questionnaire survey and interviews of computer-assisted technology to investigate the speech act of teachers asking questions, which provides a new perspective for understanding teachers' classroom discourse effectiveness model. In this way, teachers and students can make better use of language to achieve the purpose of communication.

Keywords: Questioning by Teachers in Classroom, Speech Act Theory, Cooperation Principle

1. Introduction
The speech act theory was first proposed by British philosopher J.L. Austin. The theory aims to answer the question of how language is used in “doing” rather than “referring to”. It embodies the linguistic view of “speech” and “act”[1]. American philosopher Grice believes that to achieve a specific goal in all language communication activities, there is a tacit understanding between the speaker and the listener, a principle that both parties should abide by. He calls this principle the principle of cooperation. The principle of cooperation is reflected in four criteria as follows: quantity criterion, quality criterion, association criterion, and method criterion. Searle, a British philosopher, considered that speech act could be divided into direct speech acts and indirect speech acts. In terms of speech acts, the indirect language phenomenon is actually “indirect implementation of a speech act by implementing another speech act.” Teachers’ questioning in the classroom fall in the category of common speech act, which can also be divided into direct speech act and indirect speech act, i.e., the teacher's real question and false question in the classroom[2]. For example, teachers asking questions such as “Who hasn't submitted their homework today?” Or “Who is absent today?” These questions are true questions, i.e., questions are asked, and their literal meanings are consistent with discourse
meaning. The purpose of asking questions is to get new information. “What time is it?” The question depends on the context. If the teacher wants to train the sentence pattern that asks the time, the question is a false question; if the teacher wants to know the time, then the real questions are asked. Fake questions have a pragmatic function and are not intended to seek information, but a means to achieve other pragmatic purposes, i.e., to implement other speech acts such as requests or suggestions indirectly by implementing the speech act of asking questions, which has a literal meaning inconsistent with the meaning of discourse [3]. The rules to be followed include the following: (1) The speaker has no intention of seeking new information; (2) The literal meaning of the speaker's discourse makes the listener feel inappropriate in the context at that time; (3) The speaker believes that the illocutionary meaning of discourse in context can be deduced.

The questionnaire by teachers is an effective means to promote learners' thinking, and in-depth understanding of the information or knowledge obtained[4]. The research on teachers' questioning in the western teaching circles is enduring, deepening, and has achieved rich and enlightening research results. For example, scholars divide teachers' questions into four categories based on their observations of language classroom teaching: Firstly, factual questions, i.e., questions with “What”. Secondly, reasoning questions, i.e., questions with how and why. Thirdly, open questions, i.e., direct questions that do not require any reasoning. The fourth is communicative problems, which can affect or control learner behavior. Scholars have divided the second type of reasoning problem into closed and open types. Some scholars have classified teachers' questioning in more detail based on conversational materials. Also, some scholars have divided teachers' questions into two categories: one is an echo-type problem, and the other is a cognitive-type problem, which is mainly used to acquire information [3]. This type of question includes asking and revealing questions. Questions are asked mainly to seek information while revealing questions are mainly to check learners' mastery by asking questions about known information. These two classifications are somewhat similar to Barnes' open and closed questions. The survey found that learners' answers to inquiring questions tend to be longer than explicit questions. In addition, some scholars 'classification of teachers' questions involves the psychological process of cognition, pointing out that one type is memory problems, and only requires learners to repeat the information or knowledge that has been presented [5]. This type of problem is a low-level problem because it only involves the shallow cognitive process of memorizing; the other is an understanding problem, which requires learners to reorganize in their heads to obtain information or use logic to reason about new content or information. Hence, it involves deep and complex cognitive processes such as inference synthesis, so it belongs to a high-level problem [4]. Some scholars have classified teachers' questions into six types: evaluative questions, intellectual questions, understanding questions, analytical questions, comprehensive questions, and practical questions [5].

Most of the current studies on teachers' questions focus on the classification of the questions themselves, the purpose of which is to focus on the enlightenment to teaching, how to better improve the questioning skills, improve the teaching effect, etc. There is little research on the combination of language use. Xiao Su has done analysis on relevance theory and classroom teachers' discourse and tried to use relevance theory to explain strategies for successful communication in the classroom. Tang Yanyu and Liu Shaozhong made a general pragmatic analysis of teacher language from the perspective of practical functions, including teacher instruction, statement, question and appraisal. The article points out that teachers' questions can play two pragmatic functions - organizational and investigation function. Organizational function is manifested in stimulating students' attention and engagement enthusiasm, making learning requirements, providing clues and practice opportunities; investigation function is displayed in detecting students' learning situation, but the article does not make detailed statements about teacher questions Use classification and analysis. This article will use pragmatics speech act theory and cooperative principles to discuss teachers' questions in classroom from the perspective of language use. The purpose is to analyze the classroom discourse of teachers from a new perspective to achieve better language pragmatics.
2. Research Methods
In this research, a combination of questionnaires and interviews is used. The research objects are college English teachers in four universities. 120 questionnaires were distributed and 102 valid questionnaires were recovered. Ten college English teachers interviewed. This study attempts to analyze the pragmatic characteristics of teachers’ classroom utterances through the questioning in classroom models and the purpose of questioning.

3. Results and Discussion
The results of the interviews showed that the teachers were well aware of the questions in the classroom. That is to provide students with opportunities to practice, teachers interviewed think that there are more such problems. Questions that express emotional venting, such as complaining, blame, or surprise questions, are used less often, and motivational questions and emotional attention questions are less used. The result is roughly consistent with the survey results.

(1) Analysis of the Use Frequency of Teachers' Questions in Classroom
Teachers use the highest proportion of inspiring questions in the classroom. The others are explanatory questions, understanding questions, evaluative questions, comprehensive questions, confirmatory questions, practical questions, tests, speculative questions, rhetoric, and surprise questions. Questions for the purpose of checking exercises are used more often in college English classrooms, followed by questions that focus on the emotions of students. This suggests that teachers prefer to use question speech acts to inspire students, and they can pay attention to the emotions of students. To be people-oriented. Less used are surprise and rhetorical questions for the purpose of censure. This shows that teachers intentionally use these two types of questions as little as possible. Because these two types of questions are harmful to the self-esteem of students, if they are used in large quantities, it is obviously not conducive to teaching. Surveys and interviews have shown that most teachers are aware of this and pay attention to creating a harmonious atmosphere, which is more conducive to classroom teaching. Examination questions are used more than motivational questions and emotions, indicating that the traditional teaching concept is still centered on teachers, but the proportion of motivational and emotional questions also shows that teachers have begun to use emotional factors. Concerned about students, teachers do not just “teach” students as learning machines, but care about understanding students' “learning”. Such questions should be used more often to achieve unexpected classroom communication and teaching effects.

(2) Classification of Teachers' Questions and Analysis of Their Pragmatic Functions
Teachers are not asking questions about evaluation, knowledge, understanding, application, analysis, and comprehensive questions. They already have answers in their minds, just to check the students. Basically, it can be classified as an inspection class, which is used to check students' abilities to use language. Practice questioning is also aimed at training students to become familiar with and master the use of language. Inspiring questions are intended to draw the students' attention and thinking and motivate the students' learning initiative. Verifiable questions and emotional concerns look like authentic questions asking for information, but they are not. These two types of questions are somewhat special and cannot be simply classified as true or false. Because in the special context of the teaching classroom, this type of questioning has both characteristics. On the one hand, it seeks information, and on the other hand, it also contains pragmatic intentions. Teachers use this to show students that teachers care about their receptiveness and understanding, and that they care about students' learning emotions. Not blindly detached from students. This is illocutionary behavior. The effect of this is that students can feel the teacher's care for their education, thereby increasing their love for teachers, promoting their motivation for autonomous learning, and working harder. This is post-verbal behavior. The purpose of declarative questions is not just to obtain information, but to provide information. Incentive question is essentially a strategic question. Hence, the use of these questions is a way for teachers to achieve various pragmatic purposes, which is also a special speech act.

(3) Analysis of Illocutionary Behavior of Teachers
According to Searle's illocutionary behavior theory, we can classify verbal behaviors involved in teachers' questions into three categories: elaboration, instruction, and expression. Data discriminative evaluation can be performed on these three illocutionary behaviors.

1) Explain the membership function of the class

Assuming that $U$ is the entire data domain. $U_i$ represents the $i$-th element in $U$, i.e., $i \in 1,2,3,\ldots,n$. $A_j$ represents the $j$-th element in $U$, $j = 1,2,3,\ldots,n$. $S_{ij}$ represents the attribute value of the $i$-th element, and the $j$-th attribute. $a_{jk}$ represents the $k$-th attribute value $k \in 1,2,3,\ldots,t$ in the $j$-th attribute, where $t$ represents the class number of one attribute. $N(a_{jk})$ represents the count of $a_{jk}$, and the dependency between attribute value pairs can be expressed by the membership function of the attribute value, as shown in equation (1) below:

$$\mu_A(S_{ij}) = \frac{N(a_{jk})}{n}$$ \hspace{1cm} (1)

Where $n$ is the data number.

2) Membership Function of Instruction Class

Assuming that $l$ is the number of classes of attributes, $C_i$ is the first class, $N(C_l)$ is the number of attributes in $C_i$, $C_{ij}$ is the $i$-th attribute value in class $l$, and the membership function of the attribute value is as shown in equation (2) below:

$$\mu_A(C_{ij}^{(l)}) = \frac{N(C_i)}{n}$$ \hspace{1cm} (2)

3) Membership Function of Expression Class

The membership function of the class attribute is shown in equation (3):

$$\mu_A(C_{ij}^{(l)}) = \frac{N(C_i)}{n}$$ \hspace{1cm} (3)

The meaning of the variable is the same as the membership function of the above type.

The questions raised by teachers in the classroom involve slightly more instructional types, i.e., the speaker tries to make the listener do something. Some of the above types of questions have some meaning beyond the words while expressing teachers' attitudes and emotions. See Table 1. For example, surprising questions and rhetorical questions, i.e., teachers believe that students in the context of the time, not only treat the teacher's words as simple questions but can understand the pragmatic meaning of the teacher's questions, which is the teacher's blame, warnings or complaints. If the teacher asks “hasn't homework done?" The implication is “I hope students can finish the assignment quickly"; for example, the teacher asks “Did you listen to me?" The implication is “I hope that students can focus immediately on listening and listening “; the implication of motivational questions is to motivate students to study hard. If the student does what the teacher intended, then the teacher asks this speech act as a perlocutionary force. It is also worth noting that rhetorical and surprise questions have both the characteristics of expression and instruction. Rhetorical and startling questions perform a function of instructions while expressing a specific psychological state and have special meaning and power beyond words.
**Table 1.** Extra-verbal behavior of teachers’ questions

| Question type                  | Illocutionary categories | Beyond the words (fundamental conditions) | Adaptable | Sincerity condition                      |
|--------------------------------|--------------------------|-------------------------------------------|-----------|-----------------------------------------|
| Explanatory questions          | Elaboration class        | The speaker promises the truth of a situation | ↑Discourse → Objective World | Believe               |
| Motivational question          | Instruction class        | The speaker tries to make the listener do something | ↓Objective world → Discourse | Hope                  |
| Motivation surprise question   |                          |                                           | No        | It varies according to different facts, regret, gratitude, sadness, congratulations, etc. |
| Motivation rhetoric question   | Expression class         | The speaker expresses his psychological state to an objective state |           |                                        |

4. Conclusion

Teachers ask questions in classroom, a special language environment, features both general questioning – to obtain information, and its pragmatic characteristics, i.e., it has a certain illocutionary meaning. Some questions are only asked for a pragmatic purpose. Certainly, this does not mean that all questions raised by teachers in the classroom have a pragmatic purpose. Questions such as intelligibility and answer determination have no pragmatic purpose but to acquire information only. However, such questions are rarely used in the classroom. What we explore in this paper are the general pragmatic characteristics of questions in college English classroom. The exploration of this pragmatic feature can help language teachers and students use language for classroom communication better.

Acknowledgments

Scientific Planning of Education in Heilongjiang Province 2018 (GBD1317151).

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