

The Application of *Cooperative Principle* in Classroom Language between Teachers and Students

Xiwen Huang^{1, a}, Lingjian Yang², Jie Yang^{3, b}, Pingchuan Xiang⁴

¹ Macau University of Science and Technology, Macau, China

² Nanchong Film Industry Vocational College, Nanchong 637000, China

³ Asia-Europe Institute, University Malaya, Kuala Lumpur, 50603, Malaysia

⁴ Chengdu College of Arts and Sciences, Chengdu, 610400, China

^a 2230008298@student.must.edu.mo, ^b 23058766@siswa.um.edu.my

Abstract: *The Cooperative Principle*, as proposed by H.P. Grice, has been increasingly applied in educational settings to enhance communication between teachers and students. This paper reviews the application of the Cooperative Principle in various educational contexts, highlighting its significance in fostering effective classroom interactions. The principle, which emphasizes the importance of cooperation in conversation, is analyzed through different studies focusing on questionnaires, childhood education, online education, and language instruction. The paper, using case studies on the application of the maxims of quantity and quality in language instruction. It suggests that teachers should provide concise instructions and offer corrective feedback to enhance student engagement and language acquisition. In conclusion, the Cooperative Principle plays a vital role in educational communication, yet its effectiveness is influenced by individual and regional differences. Teachers are encouraged to adapt their lesson plans to incorporate the principle, ensuring more effective and supportive learning environments.

Keywords: Cooperative Principle; Classroom Communication; Questionnaire Analysis; Childhood Education; Online Education; Language Instruction.

1. Introduction

In recent years, the Cooperative Principle has been used dramatically in different fields, such as education, business, and so on. Referring to the field of education, a study by Hamed focused on how children with autism use coherent and cooperative language strategies in conversations, with the conclusion that children with autism will adhere to most of maxims except for frequent violations of the maxim of relevance (D. Hamed, 2019), which calls for society to pay more attention to the spiritual communication of children with disabilities and the importance of using cooperative principles appropriately with these children in daily life. Regarding the concept of spiritual communication, researchers have explored the different meanings that may arise from the term "cooperation" in different contexts. In the field of psychology, the cooperative principle can be regarded as explaining behavior in therapeutic dialogues, emphasizing more on emotional communication. In terms of education, the cooperative principle is seen as effective communication between teachers and students, emphasizing more on rational communication (Yona Dwi Tirta Syafitri, 2019). With the development of science and technology, the cooperative principle is often combined with AI technology. Game activities are designed through AI technology, and the cooperative principle is manifested in verbal interaction and communication between teachers and students in the classroom. Researchers compare the application of AI driven educational dialogue agents in the field of education with the cooperative principle and trust. At the same time, GPT is used to set questions and predict possible answers to questions provided by students in classroom communication, providing an important role in creating a more personalized and supportive learning environment (Matthias Wölfel, 2024). Some scholars have also proposed the difference between

using AI technology for collaborative writing and individual writing. Students who use collaborative writing technology have better writing skills than those who use individual guided writing technology. AI technology can provide learners with more new writing ideas and frameworks based on writing topics, adopt process oriented teaching methods, peer cooperation to polish writing, maximize the use of quality and related principles in cooperative principles, and improve the writing skills of students.

2. The Latest Research

2.1. Cooperative Principle in Questionnaire

Ian Maun's research focused on a school transfer program in a small town in the UK, which allowed children aged 11 and above to 14 before the end of the summer semester, in mid June (Ian Maun, 2009). Researchers conducted a questionnaire survey using a combination of open and closed questions to collect the views of teachers on early school transfer plans. In open-ended responses, researchers applied the cooperative principle to analyze the effectiveness of written responses of the surveyed teachers, and determined whether they were relevant by analyzing their vocabulary and sentence structure. The conclusion drawn from the study was that the responses are generally correlated, manifested in semantic coherence and logical reasoning when answering, while teachers repeatedly used synonyms to reinforce their intended viewpoints. At the same time, teachers also followed the maxim of quality in the answering process. In order to avoid ambiguity, they will use explanatory terminology to simplify expressions. However, in answering some questions, the teacher used some vague concepts, such as mentioning "mathematical learning" in the questionnaire, and when the teacher answered it, they turned it into "academic achievement", which was clearly a relatively broad concept.

When asked about the adaptation issues of Y7 students in the questionnaire, the teacher discussed their adaptation issues.

However, there are some certain limitations. The study was conducted in a school in a specific British town, and the sample may not be universal, which limits the generalizability of the research results. The research only focuses on 53 teachers, and the sample size is too small, which may affect the strength of statistical analysis and the representativeness of the results. In some cases, the observed relationship may be opposite to the assumed causal direction, and it may be due to a positive view of ETS that teachers are more willing to participate in the questionnaire survey, rather than work experience leading to a positive view. The questionnaire setting lacks clear reliability and validity tests, and views on ETS may be related to their work experience. However, due to the lack of experimental control or time series data, it cannot be determined whether work experience led to their views on ETS or other factors. In this case, AI software can be used to pre-test the validity of the questionnaire. The research findings may be influenced by specific cultural and educational backgrounds, limiting their applicability in different cultural and educational systems. The teaching methods, curriculum design, and professional level of teachers in schools can also have a certain impact on the credibility of the questionnaire results. It is best to introduce the professional ability and level of the surveyed teachers in the literature in advance.

2.2. Cooperative Principle in Childhood Education

Tetsuya Yasuda researched on how guided gaze transfer affected the understanding of referential intent of children when learning object component names. Researchers explored through experiments how the direction of adult gaze affects children's vocabulary learning and inference when teaching new component names (Tetsuya Yasuda, 2022). The experiment was divided into two conditions. The first one was no shifting condition. Under this circumstance, the experimenter continuously looked at the participant's face while pointing at the object component. This continuous eye contact may violate the maxim of quantity, as it did not provide enough information to clearly indicate the part of the named object. The results indicated that children under these conditions often interpret the labels provided by the experimenter as the name of the entire object, rather than a part of the object. Secondly, there was shifting to object. In this occasion, the experimenter first established eye contact with the child, then shifted their gaze to the object and looked at it when pointing to the object component, providing more information through gaze transfer, helping children understand that the given name refers to a specific part of the object. The results showed that children and adults aged four and a half were able to correctly infer component names under these conditions.

There are certain limitations in this study. The article points out that under no shifting conditions, the experimenter continuously looked at the face of children, which may violate the maxim of quantity as it did not provide enough information to indicate the part of the named object. Cooperative principles were originally designed for verbal communication, and the interpretation of non verbal signals may have more ambiguity. In the article, although gaze transfer is used as a nonverbal signal, different children may interpret this signal in different ways, which may lead to

differences in understanding reference intention. Meanwhile, children aged two and a half are less sensitive to gaze transfer than children and adults aged four and a half. This indicates that the effectiveness of nonverbal signals may be limited by the developmental stage of children, and younger children may not have developed the ability to fully interpret these signals. The development level of mental theory may vary among different children, which may affect their ability to use nonverbal signals for cooperative communication.

2.3. Cooperative Principle in Online Education

Filio Constantinus mainly explored the interaction between teachers and students in the context of Emergency Remote Teaching (ERT), and found that there are obvious problems in teacher-student communication in the ERT environment, including insufficient communication, insufficient information, and untimely feedback (Filio Constantinou, 2023). Through case studies of students, it was found that students did not turn on their cameras during live classes, which violated the maxim of quality, as teachers were unable to obtain visual information of student participation and understanding of the course. Students who failed to submit their assignments on time violated the maxim of quantity, as teachers were unable to understand the student's learning progress and understanding. Students pretended to be listening during live classes but were actually doing other things, which violated the maxim of quality because they do not sincerely participate in the learning process. Students did not follow the teacher's instructions in group tasks and violated the maxim of relevance because their behavior was not related to the learning objectives. Students were too verbose when answering questions during live classes, which violates the maxim of manner because the communication not effective enough.

Researchers have well combined AI technology with online teaching for case analysis, but although the cooperative principle provides a framework for analyzing communication effectiveness, the paper may not fully demonstrate the direct causal relationship between criterion violation and learning loss. In an ERT environment, learning loss may be caused by various factors, including technical issues, student motivation, family environment, etc. The cooperative principle originated from the Western communication model and may not be fully applicable to communication practices in different cultural backgrounds. The paper may not have fully considered the impact of different cultures on teacher-student communication behavior and the application of cooperative principles.

3. The Case Study of Cooperative Principle in Language Instruction

3.1. The Maxim of Quantity

The maxim of quantity refers to the participants in conversation to make their contributions as informative as required. The following situation I recorded is based on the observation of an open EFL class of a middle school in Zhuhai. The teacher is grouping and asking students to finishing a provided task. The followings are the conversation between teachers and students:

T: Today I am going to teach you the lesson called "The Story of Ma Liang". Now, I am going to ask you to open your book and turn to page 23. You need to read the story on the book in a group. Next, I am going to group. I am going to

divide the whole class into seven groups, six students in a group. Then, I am going to ask you to look at exercise one “Guess: what can Ma Liang draw?” You need to share your opinion with your group mates. In your answers, you need to use the following sentence pattern: “Ma Liang can draw...”. I am going to give you ten minutes. After that, I am going to invite the representative of each group to share your ideas with us. Now, work in groups quickly.

S: OK.(Most of the students are confused about the instructions)

In this conversation, the teacher violates the maxim of quantity as she gives students lots of information once. Although this way can accelerate classroom teaching progress, it is a little bit teacher-centered.

The suggestions are given as follows:

First, it is recommended that imperative sentences should be used in instructions. There exists quantities of long sentences like “I am going to” and “You need to”, which results in the waste of time and confusion of listeners. The instruction-“Now, open your book and page 23. Read the story in groups. Six students in a group. Share your opinions with your mates of exercise one and use the sentence pattern ‘Ma Liang can draw...’” -is better. Meanwhile, some useful ICQS(Instruction Checking Questions) are suggested between every two instructions. For example:

T: Let’s learn the “the Story of Ma Liang”. Now, open your book and turn to page 23. Cindy, which page?

Cindy: Page 23.

T: Great. Read the story in groups. Six students in a group. Tony, do you need to work alone?

Tony: No, in a group.

T: Excellent, how many students in a group, Linda?

Linda: Six.

Under these circumstance, students are able to activate their motivation in oral communication and be engaged in English atmosphere.

3.2. The Maxim of Quality

The maxim of quality is regarded as the information responded to the students should be genuine and not spurious. The following situation I recorded is based on the observation of an open EFL class of a middle school in Shantou. The teacher is asking students some questions about the city-Shantou:

T: Tell me something about Shantou.

S: The weather is warm and sunny. People often wear coats and sweaters in the street.

T: Yes. Anything else?

S: The food is delicious. I like the beef balls very much.

T: Yes. Anymore?

S: People is friendly and kind. They likes having fun with each other.

T: Yes. Who want to add something?

It is obvious that wrong answers as student provide, the

teacher respond to him with positive and simple feedback, which leads to meaningless conversation.

In the first role, students’ response is illogical “If the weather is warm and sunny(it means in summer), students should wear T-shirt”. In the third role, grammatical mistakes “they likes” could be found.

The suggestions are as follows:

T: Tell me something about Shantou.

S: The weather is warm and sunny. People often wear coats and sweaters in the street.

T: Great, but, people wear coats and sweaters?

S: People wear T-shirt.

T: Excellent. Anything else?

S: The food is delicious. I like the beef balls very much.

T: Terrific. Anymore?

S: People is friendly and kind. They likes having fun with each other.

T: Well, “people are” or “people is”? “They likes”?

S: People are friendly and kind. They like having fun with each other.

4. Conclusion

Cooperative principle has played a significant role in the field of education, which can be used for both writing classroom improvement, early childhood education, and online education, as well as promoting the socialization process and communication of students. However, due to individual differences among students, some introverted students may not be willing to communicate, and there are regional differences among teachers. Teachers in less developed areas have relatively fewer classroom interactions. As for language instruction, Q&A plays a crucial role in input and output of students. Teachers need to use Cooperative Principles to better their lesson plan, such as shortening instructional language, using flexible feedback.

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