# Analyzation of ZPD Theory in the Context of Multi-Interaction Class Teaching

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**Abstract:** With so many teachers nowadays utilizing interaction in their classes, interacting seems to be more like a daily practice that people believe is the right way to do education than a science-explained action. In the process of second language acquisition, interactive teaching is not only a very important teaching strategy, but also an extremely effective teaching method in classroom teaching. The practice of interactive teaching has developed and changed on the basis of the original practice in the developing second language teaching environment. Diversified interactive ways, means, contents, all-round integration and language implementation are more abundant and easy to be accepted by students in diversified interactive language teaching. In this paper, the authors want to analyze the reasons behind classroom interaction, the ideal situation of utilizing it, the practical value of utilizing it, and Modern use: College seminar, presentation, games.

## 1. Introduction

Four-class secondary school teachers and students were observed for four weeks to comprehensively determine the situation of class interactions in the second language class. Through observation, it is a good phenomenon that most teachers are aware of adding interactions in the class, and only a few teachers choose to teach the knowledge directly.

However, there are still some problems with interaction teaching. The following paragraphs will explain the practical situation and issues through three main types of interaction model in the class.

### 1.1 The specific situation of second language classroom teaching interaction between teachers and students

The first type, which is also the most common type, is the interaction between teachers and students. In this situation, teachers mostly use two kinds of interaction to help teach: questions and answers (QA) and games.

It is easy to understand the meaning of QA, which means that teachers ask questions, and students answer them. But, since there are too many uncontrolled factors, it is uneasy about exerting such an approach ideally, which would impact the QA outcome. Like students' personalities, the different extent of their mastered knowledge and experience, the answer sequence, and so forth. Specifically, the answer sequence will influence students' concentration. When teachers ask students in line, students will know whether they need to answer the following question or not. Thus, some of them are more likely to be distracted because they do not have to answer. However, even if teachers ask questions randomly, the individual character will also impose a passive effect. For example, there is a girl called Jane, who was timid to answer any question. Every time the teacher asked her, she lowered her head without a word. Therefore, she can not participate in the class naturally and lead to worse learning performance. Besides, one of the biggest problems of QA teaching is one-one interaction. Such a property makes teachers focus only on one student while asking a question, and they can barely not have enough time to check every student's learning through a class by this method. As a result,

many students are unavoidably being ignored, which is for teachers to understand everyone's trouble and help them.

For the game part, compared with enhancing comprehension, it is more accurate to say it is a better way to improve students' attention. For one, students usually feel tired or dis-concentrated during the afternoon. One of the teachers used a train game to active students: asking students to review the learned words in the word chain game. In this way, students actively interacted with the teacher in class and became vibrant in the following time. Nevertheless, teachers need to organize class discipline or group the team in some situations, which will consume lots of time. And still, some students can not engage in the games due to their personalities.

So, the primary function of interactions between teachers and students is motivating and activating students, like approaching a question to attract students' concentration and let them think. To maximize the outcome of this type of interaction, teachers have to understand every student's information, whether by character or mastery of knowledge, to teach students more targeted and increase their participation. For example, if teachers know every student's weakness, they could ask questions with pertinence.

## 1.2 The interaction among students during second language classroom learning

Next comes interactions amongst students. There are three methods commonly used in the class: discussion, debate, and situational teaching.

Discussion means students discuss with each other by using the knowledge they have learned. There is an interesting discovery about this method. That is, do the discussion as soon as students have just assimilated the new knowledge. To be specific, among four classes, two teachers like using discussion in the class. However, there are some differences. Teacher Tian usually lets students discuss for about three minutes after they have just studied the new information, while teacher Wang asks students to discuss at the end of the class. It seems that there are no differences between these two methods. But after testing the same knowledge by paper at the end of the day in the two classes. The former class gets a better score than the latter class. Hermann Ebbinghaus (1850-1909), a psychologist in Germany, proposed that forgetting begins immediately after learning [1]. So, a better way to memorize information is to review it many times and review it on time.

The second way of interaction among students is debate. But this method is not that popular in class at present. The key reason lies in the fact that debate requires numerous investments, like time, preparation, people, and place. Teachers will give students a topic to prepare and then divide them into two teams. When the debate started, students could express their thoughts freely and argue with each other at a given time. Through the argument, students could learn many new words or new ideas while improving their second language fluency because they need to speak quickly.

Situational teaching is a prevalent way of interaction teaching as well. Creating a situation related to the teaching content increased students' interest in learning and enhanced their understanding. The formation and outcome are similar to the debate. Both are beneficial to improve students' learning initiative and enthusiasm. The merit of situational teaching is less preparation. Teachers only need to give two or three students a topic and let them have a free conversation.

Via the observation, compared with the interaction between teachers and students, students perform well by interactions between students. They like talking with partners and sharing their opinions, assimilating the knowledge through discussing and debating under an exciting and realistic background. The outcome is also apparently better than the traditional teaching method (obtain information through teachers).

As a teacher, it is essential to focus on creating conditions to let students practice and learn more through debate and situational teaching and pay attention to several principles. First, teachers should select an appropriate topic within students' ZPD and based on students' daily life [2]. It should also be vivid to simulate students' learning interests. Then, under a proper background, guide students to integrate their masted experience and new knowledge and let them think and discover further information.

## 1.3 The classroom teaching of teacher-led second language teaching

Unlike other teachers, two teachers choose to transmit knowledge to the students directly, namely the code model or the teacher-led teaching. However, it is slightly different from traditional code model teaching, which shares knowledge without help but only by mouth. Instead, they use materials to help students learn, such as PowerPoint, videos, etc. They make pretty PowerPoints including all the knowledge to attract students' attention meanwhile using videos to enhance students' comprehension. Then students note down all the information. It is undeniable that this model is more efficient than others because teachers could teach things as much as possible and do not have to set time aside for interactions. But this method is hard to get a better outcome.

On one hand, it is still easy to find several students who did not concentrate on the class, whether sleeping or talking. Most of them explained that they do not have a sense of participation or think it is boring to write down the knowledge on the note during a whole class only. The key reason is the class lacks interaction to arouse students' enthusiasm and activity.

On the other hand, such a teaching method could barely advance students' memories. To be specific, although some materials are fascinating, they are not impressive. Most learning materials always have some irrelevant information, such as dynamic pictures or fancy templates, which will distract students' concentration. Moreover, materials also include too much information, just like textbooks. Although the formation is different, it also lacks emphasis. As a result, students can not easily recognize the vital parts and memorize them. The following experiment demonstrates it. Eight students were chosen to verify the outcome: four students (first group) learned the passage through the interaction model, and the others (second group) studied the same through the teacher-led model. Then the director asked them to recite the passage after they learned the passage three days later. Three students of the first group recited the passage precisely and integrated their daily lives. By contrast, the second group did not accurately repeat the passage because they learned it by rote memorization [3]. The result is evident that interaction is essential in second language acquisition class.

In conclusion, through observation, interaction teaching is crucial and can get a better outcome than a teacher-led class. Furthermore, in the interaction model, students' interactions are preferable to interactions between teachers and students. However, how to best utilize these measures is still teachers' problematic issue. For instance, in the teacher-student interaction model, teachers need to understand and research students' characters. In the students' interaction, teachers need to let students review the knowledge on time and give them practice chances within a proper situation setting.

## 2. The practical value of interactions in the development of a second language

The early parts of this paper address classroom interaction of second language teaching in reality and the prerequisite to creating a diversified interactive classroom. While a great deal is now known about the mechanism behind the acquisition of a second language and its attribution to Interaction, little is known about the practical effect of these interactions on a nonnative's linguistic development. This section of the paper is specifically designed to evaluate the extent to which interactions contribute to second language production.

## 2.1 The effect of multiple interactive teaching on second language learning between native and nonnative

One of the early views of interaction's effect on second language learning held that interaction, such as conversational interaction, is merely a device that facilitates the learners to practice the grammatical rules they learned in a conversational setting [4]. (Gass & Varonis, 2008) Therefore, classroom interactions with native speakers were identified only as a means of reinforcing students' memory of the grammatical rules.

In 1975 Wagner-Gough and Hatch proposed another function for conversational interaction in second language development: Forming the basis for the development of syntax, the ability to arrange words into sentences. Therefore, this paper holds the belief that more interactive teaching between a native speaker and a nonnative speaker can bring progressive results when it comes to second language

learning. The following real-life example serves to illustrate how language development can take place within a conversational interaction, as the child learner uses the conversation to strengthen her syntactic development.

From Ellis (1985, pp. 79-80)
NS=Native Speaker
NNS=Nonnative Speaker
NS: Do you want to look at the next picture? Yeah?
NNS: Man.
NS: A man. And do you know what this is? A wall.
NNS: A wall.
NS: Like that one there. A wall.
NNS: A wall, a wall.
NS: Yes. Now, can you see what the man is doing?
NNS: A man wall.
NS: He's going into the wall.

Ellis (1985) indicated in his book that "no examples of two-word utterances in this child's discourse before this conversation". It can be noticed that the conversation itself provides the framework or, as Ellis states, "... the breakthrough points" for a two-word utterance to develop [5]. Therefore, interactive learning between native and nonnative clearly impacts the students' learning in a positive way as the teacher, in this scenario, used communicational interaction to help the student understand crucial vocabulary which finally enabled the child to connect man and wall in her final utterance. (Ellis, 1985, p.79-80)

Despite the promising relationship between Interaction and second language learning, the effect of interaction on learning remains controversial. Sato (1986) challenged this direct positive relationship by examining the English of two Vietnamese boys. She found out that the interaction between their teacher and them did not increase language proficiency. However, Gass and Varonis pointed out her study might be flawed because "she focused on the marking of past time reference and did not suggest the grammatical encoding of such reference increased as a function of proficiency (p.285). The nonnative speakers relied on the situation to establish a time frame, therefore it is hard for them to reduce the time when communicating. Furthermore, in the case of past tense marking in English, the feature in question is often not phonologically salient, reducing the learner's opportunities to use relevant information. Hence, given their relatively rudimentary knowledge of English, one wonders whether the situation would be different if the learners were at a different stage of development, a stage at which they had the capability to learn past tense forms (Pienemann, 1992).

After analyzing both the pros and cons, this paper is able to generate the conclusion that Interactive teaching between native and nonnative speakers has a positive impact on second language learning.

## 2.2 Interaction hypothesis and its practical value to learning a second language

The language learning theories have traditionally been divided on 'nurture' and 'nature' distinctions, advanced by the social-interactionist and nativist camps respectively. On one hand, social interactionists like Vygotsky believed that social interaction plays a critical role in the learning process and proposed the zone of proximal development (ZPD) [6]. On the other hand, nativists such as Krashen perceive the use of language as an innate ability. According to Krashen's input hypothesis, language acquisition takes place during human interaction in the target language environment. It happens when the learner is exposed to rich comprehensible input in the target language. Yet, in order for the acquisition to occur, the input would need to have a margin beyond the learner's current level of linguistic competence. It is not hard to see that Vygotsky and Krashen's ideas on language learning share some similarities.

This paper wants to use Long's Interaction hypothesis as a base to propose some practical value for using Interactive teaching. Long, as an interactionist, stresses the significance of interactional modifications which occur in the negotiating meaning when communication problems arise (Ellis,

1994). His Interaction hypothesis argues that modified interaction, or negotiation of meaning, makes an input to be comprehensible [7].

In a research study done by Muho and Kurani, 97 participants were asked to finish a questionnaire about their ideas toward interaction. The questions are as follows: Is interaction related to second language acquisition? How? Which types of interaction promote second language acquisition? What are the positive effects of negotiation in language acquisition?

Out of 97 people, 50 students claimed that they have better results when they have positive opportunities to express their personal meanings; 25 students claimed that they need a full range of contexts that cater for a full performance in the language; while 22 students claimed that they need a creative context of language use which helps them to participate in activities that are beyond their level of proficiency [8].

Concerning the second question of the survey, the results show that the interactional features promote second language acquisition. There is a relationship between interaction and learning with a focus on three major components of interaction: exposure (input), production (output), and feedback. In the case of conversations between teachers and learners, this negotiation will lead to the provision of either direct or indirect forms of feedback, including correction, comprehension checks, clarification requests, topic shifts, repetitions, and recasts. (Muho & Kurani) Optimizing the interaction implies improving the quantity and quality of input, production, and feedback.

Given the mentioned data, the results of this research show that positive effects of negotiation of meaning and pushed output are said to have the following effects on second language acquisition: It can help promote communication, facilitate learning as it helps to recover a 'gap' between received input and the learner's output, enable learners to receive feedback through direct and indirect evidence, recall of the relevant item will be enhanced. (Muhyo & Kurani)

## 3. The Practical Value Of Multiple Interactive Teaching In The Process Of Second Language Classroom Teaching

### 3.1 Multiple interactions in second language classroom teaching to achieve teachers' comprehensive and dynamic mastery of students' learning information

Interaction with students, aside from class activities, asking and answering students' questions one on one is also a kind of it. These interactions give teachers and students the opportunity to communicate. According to Rosalyn Sword, in Effective Communication in the Classroom: Skills for Teachers (November 16, 2020) , "Communication is key in the classroom: successful teaching is generally considered to require only 50% knowledge to 50% communication skills" [9]. From these words, we can see the importance of teacher-student communication. Which is to say, communication can decide half of the success of a teacher's teaching. Through class interaction, the teacher is able to know different students' confusion, weakness, and mastery of knowledge. Further on, teachers can give different students unique assistance due to their own situations. It is certain that the level of students' learning ability in a class can be uneven. As a result, there will be those so-called "good students" and "bad students". For those who learn fast, teachers can lead them to dig deeper into the current learning material and leave space for them to explore. For those who have difficulty in understanding, teachers can focus more on basic knowledge. In this way, teachers can carry out more efficient and more targeted teaching.

### 3.2 Multiple interactive teaching in the second language classroom to achieve the three-dimensional teaching effect under multiple simulations

Most of the knowledge in language learning is in books. In other words, it is literary. However, the word is not the most efficient way to transfer information. In Visual Content vs Text Content – Epic Face-off with Obvious Winner by Allison Reed (13 May 2021), the author mentioned that "The human mind tends to perceive information in images – how it did in the early ages when first people created cave paintings" [10]. As a result, information in visual form will be more well accepted by people. It is not hard to understand that visuals are more direct than words. According to a study by IScribblers,

"Visuals are processed 60,000 times faster than text, and it takes twice as long to process and recognize words." Therefore, if teachers can transfer book knowledge into visible or touchable things, students can learn more easily, more efficiently. To achieve this, interactions, especially class activity, plays a vital role. For example, when learning new words, teachers can post pictures, let students act out the meaning, or play some games. In such a way, students' can link the words with pictures and senses, turning liter into visuals. On one hand, students will more easily understand a visible thing. On the other hand, students can have a firmer memory of knowledge. Because when they try to recall this knowledge point, they can both directly look for it and look for the pictures for the senses in class.

### 3.3 Multiple interactive teaching in the second language classroom to fully mobilize the momentum of students' autonomous learning in the classroom

There are two main different patterns of learning. One this learning through outside help, such as taking class, and collaborating with peers. Another is learning through students themselves. As Jerome S. Burner claims, teaching's ultimate aim is to cultivate autonomous learners. According to ICT-Based Assessment, Methods, and Programs in Tertiary Education by Serpil Meri Yilan and Kasim Koruyan (April 2020), autonomous learning is defined as "the process in which individuals take responsibility for their learning." and claim that for students "They take charge of their own learning and are actively involved, taking individual decisions according to their necessities or preferences focused on the goals they need to achieve" [11]. In other words, students should clearly know their own weaknesses and problems. Interaction and communication with the teacher give students the opportunity to solve their confusion. However, students need to know their own learning situation so that they can make use of class interaction. Which is to say, students themselves must autonomously learn something. Otherwise, they are not able to know which point they do not fully understand, they are not able to find their own weakness, and are not able to ask the teacher questions. As a result, to some extent, the interactive class can motivate students' autonomous learning.

### 4. Conclusion

In conclusion, this paper was designed to review how interactive teaching facilitates second language learning. Classroom Interactions are divided into two types, interactions between teachers and students, interactions between students, and that between teachers and class. For interaction between teachers and students, the disadvantages of it is the inconstancy due to uncontrolled factors, the ability to further distract those students who do not need to participate, the complex prerequisite which can certainly be time consuming. The primary function of this type of interaction is to activate students to participate and attract students' concentration. To maximize the utility, teachers' ability to acquaint students' background is proven to be critical.

Interactions amongst students can take the form of discussion, debate, or situational learning. Previous experiments showed the relationship between knowledge proficiency level and when teachers hold discussions.Debate, like the interactions between teachers and students, requires numerous investments. Situational teaching, similar to debate when it comes to the formation and outcome, are both beneficial to improve students' learning initiative and enthusiasm. Yet situational teaching requires less preparation. Over the observation, students prove to achieve greater outcomes when interacting with other students than with teachers.

Rather than interacting with students or letting them interact with each other, some teachers choose to transmit knowledge directly. The benefit of this method is its efficiency in transmitting knowledge. However, it failed to attract everyone and can barely advance students' memories. Given all the pros and cons of each type of interaction, the first part of this paper argues that it is essential for teachers to focus on creating suitable conditions for enabling interactions between students.

The second part of this paper seeks to analyze the extent to which interactive teaching affects second language learning. Supported by previous research, more interactive teaching between a native speaker and a nonnative speaker can be very progressive. The experiments done by Muho and Kurani, showed the positive effects of negotiation of meaning and pushed output. They can promote communication,

facilitate learning, help recover a gap between received input and the learner's output, enable learners to receive feedback through direct and indirect evidence, and enhance the memory of relevant items.

The final part of the paper reviews the current views of interactive teaching shared by contemporary scholars and real life uses of it. By using interactive teaching, teachers can identify students' problems and react with them using appropriate ways. This part also recognizes the three-dimensional teaching effect under multiple simulations of diverse interactive teaching. Teachers can transfer book knowledge into visible or touchable things which allows students to learn faster. Finally, this paper recognizes interactive teaching's ability to motivate students to become autonomous learners.

## References

[1] Ebbinghaus, H. (1913). *Memory; a contribution to experimental psychology*. New York city: Teachers college, Columbia University.

[2] Lloyd, P., Fernyhough, C., Vygotsky, L. and Wygotski, L., 1999. *Lev Vygotsky*. London: Routledge.

[3] Ariza, E. N., & Hancock, S. (2003). Second language acquisition theories as a framework for creating distance learning courses. The International Review of Research in Open and Distributed Learning.

[4] Gass, S., & Varonis, E. (1994). Input, Interaction, and Second Language Production. *Studies in Second Language Acquisition, 16*(3), 283-302. doi:10.1017/S0272263100013097

[5] Gass, S., & Varonis, E. (1994). Input, Interaction, and Second Language Production. *Studies in Second* Language *Acquisition, 16*(3), 283-302. doi:10.1017/S0272263100013097

[6] Gass, S. M., MacKey, A., & Pica, T. (1998). The Role of Input and Interaction in Second Language Acquisition: Introduction to the Special Issue. *The Modern Language Journal*, *82*(3), 299–307. http://www.jstor.org/stable/329956

[7] Long, M. H. (1983). Input, interaction, and second language acquisition. Annals of the New York Academy of Sciences

[8] Muho, A., & Kurani, A. (2013). Components of Motivation to Learn from a Psychological Perspective. *Academic Journal Of Interdisciplinary Studies, 2*(4), 173. https://www.mcser.org/journal/index.php/ajis/article/view/119

[9] Rosalyn, Sword. (2020). Effective Communication in the Classroom: Skills for Teachers.
[9] https://www.highspeedtraining.co.uk/hub/communication-skill

[10] Allison, Reed. (2021) Visual Content vs Text Content – Epic Face-off with Obvious Winner.
[10] https://www.motocms.com/blog/en/visual-content-vs-text-content/

[11] Meri Yilan, S., & Koruyan, K. (2020). *ICT-based assessment, methods, and programs in tertiary education*. Information Science Reference.