| **RESEARCH ARTI**

Exploring the Effects of Teacher-Student Verbal Interaction on Effects of Adolescent Learning Efficacy Based on Satir's Iceberg Theory

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| **ABSTRACT**

Teaching is an important process of teacher-student verbal interaction, which plays a significant role in improving students' academic performance and enhancing their healthy physical and mental development. In order to investigate the influence of teacher-student verbal interaction on secondary school students' learning efficacy and to understand how teachers' language affects adolescents' self-efficacy, this paper adopts questionnaires and interviews founded on Satir's iceberg theory to gather data on teacher-student relationships and their learning efficacy from eight secondary school students in four regions, including Fujian and Sichuan. Quantitative analysis is conducted by SPSS 26.0 to study the effect of teacher-student verbal interaction on secondary school students' learning efficacy. The study indicated that positive and good verbal interactions could enhance adolescents' learning efficacy. Teachers can utilize Satir's iceberg theory to touch the psychological world under the iceberg and assist students in enhancing their learning efficacy through more accurate verbal behaviors.

| **KEYWORDS**

Secondary school students, teacher-student verbal interaction, iceberg theory, learning efficacy

1. Introduction

A language is a tool for imparting knowledge and expression, and teacher language is the main medium for transmitting information to students and an important means for teachers to regulate student behavior in the classroom (Li, 2007). Teachers' verbal behavior is prevalent in all teaching activities and is closely correlated with students' academic achievement as well as physical and mental health. As secondary education is an important stage of foundational education, the role of teachers and their educational guidance cannot be overlooked. Nowadays, with the continuous updating of the teaching philosophy of the new curriculum reform, quality education has become the hotspot of teaching at this stage, yet the learning efficacy of secondary school students is frequently neglected. Learning efficacy tends to positively predict students' learning engagement (Sökmen, 2021) and affects students' academic performance as well as physical and mental health.

Iceberg theory is an important psychological theory in Satir family therapy, which believes that an individual is similar to an iceberg, and individuals can only see the behavioral part, i.e., the student's classroom performance, whereas a larger part of the inner world is hidden deeper, relatively invisible, comparable to an iceberg. This approach can help teachers better understand students' inner world and behavior patterns so that they can better communicate with students, guide students to establish a correct outlook on life and worldview, and promote their coping with multiple stresses in learning and life with a positive mindset (Huang & Zhang, 2016).

Self-efficacy refers to the degree of confidence in one's ability to employ the skills one possesses to accomplish a certain work behavior and is a necessary psychological quality for adolescents in all aspects of learning, life, interpersonal communication, and physical and mental health (Zhou & Guo, 2006). This paper uses the Iceberg theory as the basis for analysis, which consists of seven levels, with the guided paths from the top to the bottom of the ice being behavior, coping styles, feelings, opinions, expectations (of oneself, of others, from others), desires, and self. The presentation of adolescents' external behaviors is called the "explicit iceberg," while about seven-eighths of the "hidden iceberg," which is under the surface of the water, play the most central and essential role of the desire and ego (Chen, 2013), including self-concept and motivation to learn. The hidden "iceberg" is the main body of adolescents' personal state, the "inner" that has been suppressed for a long time but ignored by individuals themselves and has directly affected adolescents' self-efficacy.

2. Methods
This study mainly used the questionnaire survey and interview methods. The research team investigated the subjective views of several teenagers on verbal interaction with teachers in daily life through interviews and quantified their learning efficacy through questionnaires. And on the basis of the two, we will analyze the effect of teacher-student verbal interaction on middle school students' learning efficacy.

2.1 Research Subjects
A total of 8 adolescents (5 males and 3 females) were invited from four regions, Beijing, Chengdu, Xiamen, and Guangzhou, with an average age of M$\pm$SD=16$\pm$2.

2.2 Research Ideas
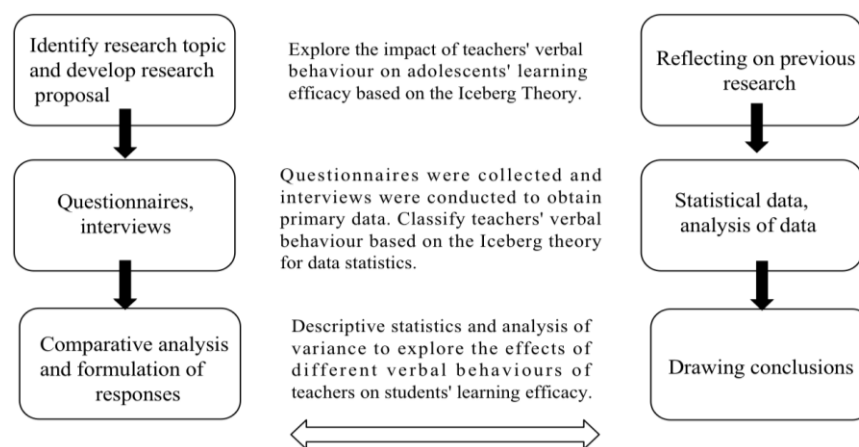
Figure 1: Research idea
Source: Data collection and statistics by authors.

2.3 Experimental Materials
2.3.1 Academic Self-efficacy Scale
The scale was modified by Yusong Liang and Zongkui Zhou of Central China Normal University (Wang et al., 2001) based on a questionnaire on academic self-efficacy developed by Pintrich and De Groot (1990). The scale measures academic self-efficacy in two dimensions: "learning ability self-efficacy" and "learning behavior self-efficacy." Each dimension has 11 questions, totaling 22 questions (Coronbacha = 0.89), and is scored on a five-point scale.

2.3.2 Self-administered outline of student behavior and teacher interaction interviews
Referring to Lv Ding's assessment of interactive feedback language in the classroom in teacher-student interaction (Mao, 2019) was constructed. The outline was divided into two parts (personal information and interview questions) with three dimensions, the first dimension being the personal situation of students and teachers, the second dimension being the teacher-student interaction from students' perspective, and the third being students' learning feelings and learning confidence. In the second and third parts of the syllabus, the author's team combined the five dimensions of behavior, feelings, opinions, expectations, and self in the Iceberg model to set questions. The interviewees responded according to their actual situation.

2.4 Research Procedures

In this study, two research methods, "questionnaire method" and "interview method," were applied to select secondary school students with similar academic performance and age as experimental subjects and to inform them about the study and obtain their consent.

Considering that it was difficult to directly ask the interviewees to recall the teachers' verbal language, the author's team selected "teachers they liked and disliked" as the focus and conducted and recorded interviews with the students' favorite and disliked teachers and their learning feelings of the corresponding subjects, and guided them to recall their verbal interactions with the teachers concerned during the interviews. At the end of the interviews, students' perceptions of learning effectiveness in the respective subjects were measured. Finally, the recordings were compiled and documented, and the information was coded and labeled using the "Self-administered Iceberg Theory Observation Scale" and the "Self-administered Teacher Evaluation Language Observation Form," and the data were summarized statistically.

2.5 Data Analysis

The results of the questionnaire were analyzed using descriptive statistics through SPSS 26.0, and the interviews were manually transcribed into textual material for cluster analysis.

3. Results

SPSS 26.0 was used to use descriptive statistics and organize the interviews into textual material for cluster analysis.

Table 1: Subjects' basic information statistics

Specimen Number	Gender	Age	Study Level	Subjects Tendency	Learning efficacy of subjects with which students and students are comfortable with	Learning efficacy of subjects with which students and students are not comfortable with	Interviews Mode	Interviews Location
A1	Female	16	3	Liberal arts	3.09	2	Phone Interviews	Online
A2	Female	13	3		4.45	3.63	Phone	Online
A3	Female	17	2	Liberal arts	4.9	2.9	Phone	Online
B1	Male	18	2	Science	4.5	2.8	Phone	Online
B2	Male	16	1	Science	4.54	4	Offline	Café
B3	Male	14	2		4	2.27	Phone	Online
B4	Male	16	1	Science	4	2.18	Phone	Online
B5	Male	17	2	Science	2.95	2.8	Offline	Café

Note: Learning level is divided into three grades according to the ranking of the class where students are, 1 is excellent; 2 is medium; 3 is weak
Source: Data collection and statistics by authors.

As obtained from Table 1, the academic self-efficacy of different interviewees when in subjects with positive interaction with the teacher was higher than the academic self-efficacy of subjects without positive interaction with the teacher.

Table 2: Analysis of the profound factors of good teacher-student relationship on students' academic self-efficacy according to the iceberg theory

Category	Positive reasons affecting academic self-efficacy	Mention Number of people	Mention Number of times
Teacher-student verbal interaction style	1) Encouragement 2) Care and concern 3) Cultivation of interest 4) Communication like a friend 5) Problem-guided approach 6) Timely feedback	8	20
Behavior	1) Listen carefully in class 2) Speak actively in class 3) Prefer to go to the teacher for help 4) Complete after-class tasks carefully	8	15
Feelings	1) Happy 2) Positive 3) Looking forward 4) Relaxed	7	20
Perspectives	Students' opinions: 1) Like the subject 2) Gained a lot of knowledge	8	9

Category		Mention Number of people	Mention Number of times
Expectations	Students think the teacher's opinion of them: 1) quick and smart 2) serious attitude 3) cultivating students' interest first 4) thinking of students 5) loving students as their children Expectations for themselves: 1) hope to get good grades, 2) hope to do their best to learn, 3) hope to attend more classes Expectations for teachers: 1) hope teachers and them will become friends 2) hope teachers will help them more	8	16
Self	1) Be confident 2) Be motivated to learn 3) Be recognized 4) I am important	8	12

Source: Data collection and statistics by authors.

Based on the dimensions of the iceberg theory, the influence of teachers' verbal interactions on students' intrinsic factors of self-efficacy was explored through feelings, perspectives, expectations, and self. It was found that when teacher-student verbal interactions were in a positive state, students' intrinsic feelings, perspectives, expectations, and self were also in a positive state, thus enhancing students' academic self-efficacy in the subject.

Table 3: Analysis of the intrinsic factors of negative teacher-student relationship on students' academic self-efficacy according to the iceberg theory

Category	Positive reasons affecting academic self-efficacy	Mention Number of people	Mention Number of times
Teacher-student verbal interaction style	1) Mockery 2) Tantrums 3) Fast speech 4) Disparagement 5) Lack of guidance 6) Lack of guidance 7) Rude language 8) Often criticize students	8	17
Behavior	1) Doing things unrelated to class 2) Sometimes talking about the teacher with classmates 3) Not completing after-class tasks carefully	8	12
Feelings	1) anxiety 2) boredom 3) fidgeting 4) aversion to happiness 5) aversion to discipline 6) dislike 7) fear	8	8
Perspectives	Students' opinions: 1) Don't like the subject 2) Difficult to learn the subject Students think the teacher's opinion of them: 1) slow response 2) not too serious in class 3) lazy 4) mistakes should be attributed to the students' problems	6	6
Expectations	Expectations for oneself: 1) hope to get good grades again 2) hope to be valued by the teacher Expectations for the teacher: 1) hope the teacher will respect the students 2) hope the teacher will improve the teaching ability 3) hope to change the subject teacher	8	14
Self	1) No confidence 2) Confusion 3) Escape	6	6

Source: Data collection and statistics by authors.

Conversely, when teacher-student verbal interactions are negative, students' internal feelings, perspectives, expectations, and self are also in a negative state, thus affecting students' academic self-efficacy in the subject.

4. Discussion and Suggestions
4.1 Discussion
First, the results of the study showed that for subjects with good teacher-student relationships, students' self-efficacy tended to be higher than for subjects with poor teacher-student relationships. This is consistent with the findings of previous studies, in which it was found that for secondary school students, there is a significant correlation between teacher-student relationships on students' learning efficacy (Zhao, 2021) and that teacher-student relationships tend to influence students' learning efficacy through their attitudes, emotions, and self-expectations (Wen, 2007). It was also found in previous research that teachers' empathy and understanding have a significant impact on teacher-student relationships.

Similarly, this study figured out that, as a factor of a teacher-student relationship, different teacher-student verbal interactions lead to diverse students' academic self-efficacy: positive teacher-student verbal interactions can increase students' academic self-efficacy in the subject by rendering their internal feelings, perspectives, expectations, and self in a positive state. Negative teacher-student verbal interactions, on the other hand, can pose a negative effect in ways, likewise.

The result is consistent with the findings of previous studies exploring the iceberg model for personal behavior change in Satir's iceberg theory, in which the teacher-student relationship begins with influencing the self, and through self-awareness and exploration, understanding expectations for learning and the self, and ultimately transforming learning behavior to enhance learning. The specific influence path and hierarchy is "Iceberg Theory - Reflecting on the Self - Clarifying Expectations - Transforming Behavior."

It is evident that positive teacher-student relationships are effective in enhancing self-efficacy and promoting teaching and learning activities. The verbal interaction between teachers and students as one of the triggers also enhances secondary school students' identification and confidence in their own learning behaviors and learning abilities at all levels.

4.2 Suggestion
4.2.1 From Idea to Practice - Enhancing Teachers' Theoretical Understanding and Practical Skills
Teachers should be conscious that when counseling students, they should not only focus on students' behavior but also on students' hearts, moving from "equal dialogue" to "deep connection" with students, touching the world under the iceberg, truly entering students' hearts, and understanding their desire from within.

More specifically, it is proposed to encourage students in a positive way, reduce criticism and blame as appropriate, communicate with students in an affirmative and encouraging manner, give them appropriate guidance, help them discover, analyze, and try to solve problems, and promote students' learning activities in a relaxed and pleasant atmosphere, build positive teacher-student relationships, and actively participate in classroom and school life.

In addition, teachers should be objective and truthful when evaluating students in the classroom and after class. There are single words like "right," "good," "very good," and other evaluation words should be less used repeatedly, as they are not effective; and the evaluation of students' classroom behavior and verbal intelligence is supposed to be less emphasized, but give more feedback on individual evaluation. If necessary, the skills can be strengthened in training, and theoretical practice of educators' teaching speech acts by means of teachers' pre-employment training and regular teaching research.

4.2.2 Consistent Communication between Teachers and Students - Focusing on Self, Others, and Context
Satir's "consistent communication" model offers suggestions for building good teacher-student relationships. The "consistent communication" model is a harmonious interaction of self, others, and context, i.e., all communication should be considered in terms of "self, other, and context." When teachers and students engage in "consistent communication," they can express their needs and listen to each other's feelings smoothly and promote the positive development of the relationship with a positive, open, and accepting attitude.

The teacher should try to weaken the definition of "teacher" and "student" as subjects, see students' inner thoughts, feelings, expectations, and desires through their external words and actions, recognize students' real and true "selves," teach with love, and build a deep emotional relationship with students through classroom teaching and after-class communication.

5. Conclusion
In the context of education in the new era, teachers' verbal behavior, which used to advocate harsh preaching, has become obsolete and should be replaced by humanized and personalized education that penetrates into students' inner world. This paper explored the influence of teacher-student verbal interaction on students' learning efficacy based on the iceberg theory model. It correlated teacher-student verbal interaction with students' efficacy through a questionnaire collection methodology, and explored in depth how verbal interaction affects students' learning efficacy through different dimensions such as feelings and expectations in five dimensions, and finally proposed specific strategies for applying Satir's iceberg theory to teachers' speech acts. Due to the limitations of the researcher's own ability and practical conditions, there are still shortcomings in this study, such as small sample size and a less formal interview format. The author's team will improve the shortcomings in future studies, expand the scope of the study so as to increase the reliability of the study, improve the research method, and construct a more in-depth and valuable study.

Conflicts of Interest: The authors declare no conflict of interest.
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References

[1]   Chen, F. F. (2013). A review of the Satya family therapy model. *Social Psychological Science,* (2), 113-115.

[2]   Huang, J. H., & Zhang, D. (2016). Using Satya's iceberg theory in educational teaching. *Profession,* (24), 66-67.

[3]   Li, H. (2007). Research on domestic teachers' discourse in light of the development of discourse analysis theory. *Foreign Language World,* (05), 83-90.

[4]   Mao, D. Y. (2019). *A study on the relationship between teacher-student relationship, academic self-efficacy, and learning strategies of junior high school students* (Publication Number 1020611554) [Master's thesis, Ningbo University]. CNKI.

[5]   Sökmen, Y. (2021). The role of self-efficacy in the relationship between the learning environment and student engagement. *Educational Studies, 47*(1), 19-37. https://doi.org/10.1080/03055698.2019.1665986

[6]   Wang, C. K., Hu, Z. F., & Liu, Y. (2001). A study of the reliability and validity of the general self-efficacy scale. *Applied Psychology,* (01), 37-40.

[7]   Wen, M. X. (2007). *A study on the influence of junior high school English teachers' classroom speech on students' emotions* (Publication Number 2008017081) [Master's thesis, Northeast Normal University]. CNKI.

[8]   Zhao, R. Z. (2021). The effect of teacher-student relationships on academic self-efficacy from elementary students' cognitive perspectives: The mediating effect of classroom attitudes. *Educational Measurement and Evaluation,* (6), 32-37+49. https://doi.org/10.16518/j.cnki.emae.2021.06.005

[9]   Zhou, W. X., & Guo, G. P. (2006). Self-efficacy: Concepts, theories, and applications. *Journal of Renmin University of China,* (1), 91-97.