

A Study on the Improvement of Social Anxiety of Primary School Students Based on Digital Literacy Context: Teachers' Multimodal Discourse Guidance in Education

Jiatong Zhao^{1*}

¹Faculty of Teacher Education, Qilu Normal University, Jinan, Shandong, China

Abstract. In recent years, the problem of 'social anxiety among primary school students' has been attracting social attention, and many studies have confirmed that 'social anxiety' among primary school students is increasing. Still, teachers' experiences using multimodal discourses to guide students to face such problems in schools have been limited. There are still gaps. This study takes digital literacy as the background. It explores whether teacher multimodal discourse guidance has an improvement effect on the psychological problems caused by "social anxiety" in primary school students in education. Through the literature review and empirical analysis, the results of the study showed that students' fear of negative evaluation is more common, while social avoidance behavior is relatively rare, especially facing high anxiety when answering classroom questions; when teachers allow students to participate in the classroom in a non-directive form or use multimodal discourse to guide students, they can effectively alleviate students' anxiety and provide new ideas for the future of mental health education.

1 Introduction

The implementation of the "double reduction" policy should have provided primary school students with more extracurricular time, allowing them to continuously add color to their lives. However, other external factors took advantage of this opportunity to enter the picture. Heavy family relationships, emerging electronic products, etc., all became fuel for aggravating the "social anxiety" problem among primary school students. Studies have shown that social anxiety is at a stable high level in adolescence, with only a small increase in mid-adolescence [1]. Children's social behavior has always been a major concern for parents, and children with social anxiety problems are often afraid to engage with strangers and become the center of attention for their peers [2]. Social anxiety is a persistent fear of one or more social occasions. In these situations, when an individual is exposed to strangers or under the scrutiny of others and is worried about his or her words and deeds, the most common characteristic is that he or she dares not look at others and is afraid of being paid

* Corresponding author: 2022023198@qlnu.edu.cn

attention to by others [3]. It has been shown that when primary school students have higher anxiety in school, they are less motivated to learn [4]. Many schools to alleviate the social anxiety of primary school students opened psychological classrooms, and timely psychological counseling for students, but most of the psychological classrooms do not play an effective role, the students just know the definition of the relevant symptoms, but do not know how to face or solve such problems, the psychological class has become meaningless, and the students' anxiety has not been alleviated, or even gradually aggravated, and the students' social anxiety is not a problem, and the students' anxiety has not been alleviated. The student's anxiety is not alleviated, and they may even gradually worsen and develop avoidance behaviors. In recent years, with the gradual rise of the multimodal multiomics research paradigm, this paradigm combines multiple perspectives such as behavior, cognition, neurology, genetics, microbial, and metabolomics [5]. Some of today's primary school students show varying levels of excessive worry and fear, and even avoidance behavior when interacting with others daily in school classrooms or at school events. This type of anxiety can occur at any age, and it refers to emotional reactions and avoidance behaviors of intense apprehension, nervousness, or fear of one or more interpersonal situations [6]. Many domestic and foreign studies have found that the proportion of people with high social anxiety is between 27.2% and 42.0% [7]. Therefore, 'social anxiety' has gradually become a popular research topic at home and abroad in recent years. So, can teachers use multimodal discourse to guide students, thus helping groups such as primary school students to effectively alleviate such problems? In combination with the technological development in recent years, multimodal collaboration may play a key role in alleviating this problem. Almost all schools use multimodal collaboration methods such as PowerPoint and corresponding regional educational software to improve students' reception ability. In daily classrooms, teachers often use some reward mechanisms, role-playing, and situational simulation, and use some non-verbal signals, such as nodding and smiles, to convey a sense of security to students etc. This study will examine whether using teachers' multimodal discourse in the classroom to guide primary school students can effectively improve this phenomenon, and will explore the relationship between teachers' use of multimodal discourse in teaching and learning as the independent variable, and primary school students' social anxiety as the dependent variable.

2 Methods

This study used quantitative research methods along with semi-structured interviews and referred the questionnaire to the Children's Social Anxiety Scale (SASC) to obtain real data on social anxiety problems among primary school students. This study used quantitative research methods along with semi-structured interviews and referred the questionnaire to the Children's Social Anxiety Scale (SASC) to obtain real data on social anxiety problems among primary school students.

2.1 Questionnaire

In this study, fifth-grade primary school students were selected as the respondents of the study, and questionnaires were distributed using a questionnaire star. 41 questionnaires were distributed, and 41 valid questionnaires were returned. There are ten questions in this questionnaire, and students fill out the questionnaire truthfully according to their real situation. The questionnaire was categorized into three dimensions concerning the Likert scale. Dimension 1, 'Fear of Negative Evaluation,' refers to the 'fear of being treated negatively by others' and is part of the cognitive dimension of social anxiety. Dimension 2 is a social avoidance behavior, which refers to students "avoiding participation in social situations". Although facing familiar friends, they still prefer safe social fields and

automatically avoid unfamiliar interactions. Dimension 3 is social inhibition, which refers to an inexplicable fear of new things, leading to the external manifestation of anxiety at the emotional level. The above three dimensions of questions can directly reflect the core characteristics of children's social anxiety.

2.1.1 Reliability and validity

Reliability testing often uses Cronbach's Alpha coefficient to evaluate the internal consistency, i.e. reliability, of a questionnaire. The coefficient range of Alpha is 0 to 1. A value greater than 0.7 indicates good internal consistency. 0.854 indicates high internal consistency among the items in this questionnaire, meaning that the items measure the same trait or concept, and the data reliability is high. Similarly, the number of sample cuts needed for the validity test is used to measure the degree of factor analysis, with values ranging from 0 to 1, with higher values indicating that the data are more suitable for factor analysis. The KMO value of this data is 0.694. As the KMO value gets closer to 1, the stronger the correlation between the variables, the more suitable it is for factor analysis. The range between 0.6 and 0.7 is acceptable, indicating that these variables are suitable for factor analysis, but the correlation between variables is not particularly strong.

2.1.2 Data analysis

As shown in Table 1, there are a total of 41 participants in this sample (N), and the results of each question range from 0 to 2. From an average perspective, the highest average score of 0.90 is "I'm worried about how other children will perceive me", indicating that fifth-grade students generally care more about their peers' opinions and begin to think about external evaluations of themselves; The average value of "I rarely talk with my friends" is the lowest, at 0.32. This data indicates that most students can liberate their nature and engage in long-term communication with their friends in front of them. From the perspective of standard deviation, the standard deviation of each question is between 0.650-0.831, indicating that the degree of data dispersion is not significant, that is, students' answers to these social feelings are relatively concentrated and not extremely scattered. Overall, it reflects that children generally experience a certain degree of anxiety, worry, shyness, and tension in social situations.

Table 1. SPSS Descriptive Statistics.

	N	average value	standard deviation
1. I'm afraid of doing things I haven't done before in front of other children	41	0.66	0.656
2. I'm worried about being ridiculed	41	0.88	0.781
3. When I am surrounded by children who don't know me, I feel shy	41	0.61	0.771
4. I rarely talk with my friends when we are together	41	0.32	0.650
5. I'm worried about how other children will perceive me	41	0.90	0.831
6. I think the children are making fun of me	41	0.61	0.703
7. I feel nervous when talking to unfamiliar children	41	0.68	0.756
8. I'm worried about what other children might say about me	41	0.83	0.771
9. I only talk to children I am familiar with	41	0.56	0.709
10.I'm worried that other children might not like me	41	0.80	0.782
Number of effective cases (in columns)	41		

2.2 Interview

In this study, a semi-structured interview method was used along with the questionnaire to interview 12 out of the 41 fifth-grade students, and the topic of the interview was 'Does the teacher use any tricks in the classroom to help students interact more easily?' The results of the interviews were categorized into two dimensions: multimodal perceptions of teaching and learning and emotional responses in social situations. Basic preparations were made before the interview, including arranging seats and preparing tools such as mood stickers and colored pens. The 12 students were divided into 3 groups, with 4 people in each group. The interview time for each group was about 30 minutes to avoid putting excessive pressure on the students. Before the interview officially begins, let the students anonymously label their common emotions in class with mood stickers, and play a simple ice-breaking game to relax the interviewee's mood.

2.2.1 Multimodal teaching perception

Dimension one is "multimodal teaching perception". In interviews, students proposed that when multimodal teaching methods combining visual and tactile senses appear in teaching, they can reduce cognitive burden, especially in classrooms that require practical operation. What is more clear than listening to the teacher is what to do, which can stimulate several modalities simultaneously in a normal environment [8]. In addition, it can provide students with an anonymous space for expression, so even if their answers are not standard, they do not have to worry about being laughed at by others. This teacher's use of multimodal teaching in the classroom can be an effective distraction for students and can enable them to hide their identity as expressive persons, greatly reducing the stress associated with their self-monitoring.

2.2.2 Emotional reactions in social situations

Dimension two is "emotional reactions in social situations". During the interview, the students mentioned that they would prefer teachers to use low-frequency speech and a gentle tone for communication in the classroom, which would also reduce anxiety when answering questions. At the same time, students hope that teachers can play a guiding role in the classroom, using gestures and instructions to help them learn, creating a peaceful social scene, and reshaping their sense of social security.

3 Discussion

Through the questionnaire survey and student interviews, it can be concluded that at present, among primary school students, especially in the middle and upper grades, students are generally concerned about negative evaluations in social situations, and the teacher's use of multimodal discourse in the classroom to guide the students can effectively alleviate the students' social anxiety, which will have a positive impact on their psychological state.

3.1 Psychological condition of primary school students

Nowadays, elementary school students may involuntarily experience some social anxiety when socializing in school. Middle and upper-grade elementary school students are particularly concerned about negative evaluations of themselves by others, but social avoidance behavior is less common. Judging from the average values of the data in the

questionnaire survey, the highest average value of "I worry about how other children will view me" is 0.90, indicating that fifth-grade students generally care more about their peers' opinions, worry about negative evaluations, and begin to think about the outside world's evaluation of themselves; but the lowest average value of "I seldom talk when I am with my friends" is 0.32, indicating that the psychological state is relatively relaxed among familiar peers. It can be concluded that primary school students in this age group have entered a sensitive period of self-concept, can perceive external feedback with alertness, and maintain a relatively natural interaction state in familiar peer environments. Although they are concerned about negative external evaluations, they have not yet transformed into behavioral withdrawal.

3.2 The influence of multimodal discourse guidance by teachers

When teachers use multimodal discourse to guide students in classroom teaching, it reduces students' social anxiety and has a positive effect on their psychological state. When multimedia learning is integrated into the classroom, it affects the relationships established between the school community, teachers, and students, as well as other cognitive participation modes and social interactions [9]. Through the questionnaire survey and student interviews, it can be concluded that at present, among primary school students, especially in the middle and upper grades, students are generally concerned about negative evaluations in social situations, and the teacher's use of multimodal discourse in the classroom to guide the students can effectively alleviate the students' social anxiety, which will have a positive impact on their psychological state. Through the interviews, it can be learned that when teachers use role-playing to guide students in a non-face-to-face way, students generally feel that it is not they who speak, but the characters themselves, which to a certain extent alleviates their anxiety; when their own homework or test papers are projected, teachers will always give affirmation and circle the outstanding parts, which makes them feel that this is a kind of recognition behavior. The use of funny videos and role-plays prevented students from over-reflecting on their behavior and reduced the 'focus effect' in social situations. Emerging technologies can be used in the classroom and combined with various tracking methods such as eye tracking, physiological data, facial expressions, etc., for analysis [10]. Teachers allow students to participate in the classroom in a non-face-to-face manner, slowly helping them break free from the pressure of language expression. When students cooperate, they try to minimize uncertainty and anxiety in interaction. Some group games can promote the establishment of mutually supportive relationships. From this, it can be concluded that the use of multimodal discourse by teachers in teaching can effectively alleviate students' social anxiety and psychological problems. The traditional language expression in teaching, which is equivalent to psychological exposure, can be transformed into a progressive desensitization process, enabling them to gain a sense of psychological security.

4 Conclusion

This study aims to investigate whether the use of multimodal discourse guidance by teachers in developmental education can alleviate and improve social anxiety in primary school students. The research supports the potential role of multimodal collaborative activities (such as audio-visual teaching methods) in dispersing anxiety and reducing social pressure in primary school students, providing a basis for future educational interventions.

Teachers should focus on a gradual process when using multimodal teaching, such as gradually growing from role-playing in the lower grades to independent expression, and avoid sensory overload when using multimodal approaches, in line with students' psychological conditions at this stage. In the future, it can further expand the sample size in

this kind of research, and it can combine emerging technologies such as VR and AR to better help students achieve non-directive participation, pay attention to the safety and protection of students when using them, and balance high-tech and low-cost solutions. Continue to explore in depth the new path of teacher multimodal discourse guidance in education for the social anxiety problem of primary school students, and effectively promote the development of students' psychological health.

References

1. B. Chen, X. Huang, G. Niu et al., The Development Trajectory and Stability of Social Anxiety from the Toddler Stage to Adolescence: A Three-Level Meta-Analysis Based on Longitudinal Research. *Chin. J. Psychol.* **55**, 1637-1652 (2023)
2. X. Peng, Y. Zhong, W. Bao et al., The Self-Esteem Generated by Hope: The Intrinsic Mechanism of Reducing Social Anxiety in Children's Psychological Quality. *J. Guizhou Norm. Univ. (Nat. Sci. Ed.)* **38**, 108-113 (2020)
3. L. Xue, Y. Jiang, P. Fang, Alexios, and Interpersonal Relationships in Middle School Students: A Moderated Mediating Model. *Psychol. Dev. Educ.* **37**, 92-100 (2021)
4. R. Moreno, R. Mayer, Interactive Multimodal Learning Environments: Special Issue on Interactive Learning Environments: Contemporary Issues and Trends. *Educ. Psychol. Rev.* **19**, 309-326 (2007)
5. Y. Xiao, X. Wang, T. Feng, Why Do Humans Procrastinate? Interpretation Based on Multimodal and Multi-Omics Perspectives. *Adv. Psychol. Sci.* **33**, 520-536 (2025)
6. X. Guo, A Study on the Causes of Social Anxiety among College Students. *Psychol. Explor.* 55-58 (2000)
7. J. Li, X. Wei, Y. Huang et al., Analysis of the Relationship between Interpersonal Trust, Self-Esteem, and Social Anxiety in College Dormitories. *Chin. Sch. Health* **36**, 1173-1176 (2015)
8. P. Bertelson, B. De Gelder, The Psychology of Multimodal Perception. *Crossmodal Space Crossmodal Atten.* 141-177 (2004)
9. A. P. Gilakjani, H. N. Ismail, S. M. Ahmadi, The Effect of Multimodal Learning Models on Language Teaching and Learning. *Theory Pract. Lang. Stud.* **1**, 10 (2011)
10. R. Azevedo, D. Gašević, Analyzing Multimodal Multichannel Data about Self-Regulated Learning with Advanced Learning Technologies: Issues and Challenges. *Comput. Hum. Behav.* **96**, 207-210 (2019)