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Does Lower Anxiety in IT Classes lead to Higher achievement? Quantitative Evidence from STEM Education in Chinese Junior Middle School Students

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Abstract In the context of increasing social competition and the lack of practicality in middle school curricula, student anxiety has become a growing concern. This study sampled 429junior middle school students from three districts in Chongqing, China, employing a quantitative research approach to explore the impact of information technology outcomes on students' anxiety levels and to analyze the moderating effects of gender and whether the student is an only child. The results indicate:(1) Anxiety levels consist of five dimensions: physical discomfort, negative emotions, stable mood, emergency response, and physiological discomfort. Among these, negative emotions, physical discomfort, and emergency response exhibit strong correlations, collectively reflecting the core characteristics of anxiety. (2) Overall anxiety levels ($r = -0.282$, $p < 0.01$) and all dimensions of anxiety are significantly negatively correlated with ITO, indicating that lower anxiety levels are associated with higher information technology performance. Among these dimensions, stable mood, emergency response, and physiological discomfort show significant correlations with ITO, while physical discomfort and negative emotions do not. (3) Gender significantly affects anxiety levels ($t = -2.995$, $p = 0.003$) with a moderate effect size (Cohen's $d = 0.40179$), showing that females have higher anxiety levels than males. However, being an only child does not significantly impact anxiety levels ($p = 0.510 > 0.05$). This study reveals the relationship between academic achievement and students' mental health in the context of STEM education, providing theoretical insights for educational practice and policy formulation.

Keywords Anxiety, Curriculum and Instruction, Information and Technology Outcomes, STEM

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I. Introduction

Nowadays, competition in society is increasing, and many people have moremental health problems due to increased pressure. Anxiety is one of the most prominent and common emotions (Liu & Huang, 2011). Teenagers often experience emotions such as happiness, pride, anger, and anxiety in school. These emotions are strong and have a profound impact on grades. These emotions were ignored in the past, and have only received more attention in the past 15 years (Pekrun, 2017). According to the World Health Organization, the number one global health issue for young people is their mental health. For students, mental health is related to effective learning (Nolan & Bergin, 2016).

STEAM is a popular learning method that integrates several scientific fields in the form of science, technology, engineering, art, and mathematics (Asrizal et al., 2023). Information technology, as an important component of STEAM education, is of great significance to the development of practical and scientific education. Introducing computers into life and workplaces will bring about huge changes, but relevant studies have shown that many people have difficulties using computers, so improper use of computers will cause them great anxiety (Torkzadeh & Angulo, 1992). Some researchers have found that in Ireland, the non-progression rate of computer science (CS) is 25%, which is significantly higher than the national average of 16% for all other fields of study. It can be seen that the learning of computer courses is more difficult than other subjects. The reasons for these difficulties may be the difficulty in mastering the core concepts of programming modules, and the lack of practicality in the laboratory environment, which is usually learned in the laboratory environment (Nolan & Bergin, 2016). Other researchers have found that computer science education is marginalized in K-12 STEM education in the United States, which hinders students' STEM education in middle school (Lee, 2015).

Therefore, students are more likely to have higher levels of anxiety in computer courses, and the development of STEM education represented by information technology is still imperfect. Computer scores can be very important to measure students' computer knowledge and knowledge-based practice to a certain extent. Research on the factors affecting computer scores is critical to students' computer learning, future work, and the improvement of teachers' teaching methods. Therefore, the correlation between STEM education represented by information technology scores and anxiety has great theoretical and practical significance.

In recent years, we often mention 'emotionality'. In today's world where people focus on the balance between life and work, emotions, as an emerging field, are receiving more and more attention in learning and social life. Adverse factors will bring anxiety, such as fear of negative evaluation and pain, avoiding new or all social situations, which will bring social anxiety. (Brook & Willoughby, 2015). In addition to social anxiety, there are many types of anxiety, including test anxiety, anxiety about a certain subject, and so on. Different anxieties will affect each other. Studies have found that people with high levels of math anxiety are more likely to have other forms of anxiety, such as daily anxiety and test anxiety. However, it is not clear how they interact with each other and affect academic performance (Carey et al., 2017).

Different types of anxiety have an important impact on academic performance. Related studies have found that social anxiety is significantly negatively correlated with academic achievement (Brook & Willoughby, 2015). Test anxiety also has an adverse effect on the academic performance of many college students, and there are gender differences. Some researchers believe that girls have higher test anxiety than boys (Núñez-Peña et al., 2016). However, some researchers disagree, believing that the anxiety levels of boys and girls are both moderate, with almost no difference.

Many researchers believe that anxiety is negatively correlated with academic performance (Torkzadeh & Angulo, 1992; Cazan et al., 2016; Selinger & Gröstenberger, 2024). However, different researchers have different opinions on the significance level. Some researchers believe that the negative correlation between anxiety level and academic performance is slight (Azeem, 2018). While some researchers believe that the negative correlation between anxiety and academic performance is significant (Halder, 2018). This may be caused by differences in different disciplines.

Different researchers also hold different opinions on gender differences. Many researchers believe that computer anxiety has significant differences in gender. Some researchers believe that women have higher levels of anxiety than men (Selinger & Gröstenberger, 2024). Some researchers believe that men have higher levels of anxiety than women (Arican, 2022). Some researchers believe that computer science is one of the biggest gender differences in several STEM fields, and list the reasons for the gender difference as girls' low interest and low sense of belonging to the stereotyped environment. We can provide an educational environment that does not conform to the stereotype to increase girls' interest in CS courses to help reduce the gender gap in computer science admissions (Master et al.,

2016). However, some researchers have stated that there is no significant difference in computer anxiety between male and female participants or that the specific relationship between the two cannot be clearly defined (Torkzadeh & Angulo, 1992; Cazan et al., 2016).

In summary, anxiety encompasses various classifications, and certain relationships exist between different types of anxiety. However, research in this area remains incomplete. While there is a substantial body of research on anxiety, studies exploring the relationship between anxiety and information technology performance are scarce. Moreover, previous findings on the significance of these relationships have been inconsistent. Some studies suggest that gender significantly influences the relationship between computer performance and anxiety, while others argue it does not. Among studies indicating a significant gender difference, disagreements persist: some researchers claim that males exhibit higher levels of anxiety than females, while others argue the opposite. Similarly, the differences in computer performance and anxiety based on whether students are only children remain unconfirmed. Furthermore, existing research highlights that both improving students' information technology performance and reducing their anxiety levels are challenging endeavors.

Thus, this study aims to investigate the relationship between computer performance and anxiety among middle school students, specifically considering the effects of gender and whether the students are only children. Specifically, the study aims to: (1) Determine the relationship between students' anxiety level and information technology outcomes. (2) Identify the differences in anxiety level among junior middle school students in terms of genders and only children.

The research that this study is conducive to is of great significance in filling the current research gaps, resolving research differences, guiding STEM education practice represented by computers, promoting students' mental health development, curriculum reform practice, and teaching and learning.

Ii. Research Method

A. Sample

The researchers used a quantitative research method and randomly selected 454 seventh-grade subjects of different genders and family backgrounds from Tongnan District, Yongchuan District and Bishan District of Chongqing, China through a questionnaire survey. After eliminating the same data and extreme values, 429 valid samples were obtained for this study. The researchers divided the dependent variable students' information and technology scores into five parts: fail (0-89 points), pass (90-104 points), medium (105-119 points), good (120-134 points), and excellent (135-150 points).

Table I. Distribution of Students 'information Technology Outcomes

Distribution of Students' Information Technology Scores		
Standard	***N***	***Percent***
fail	149	34.7%
pass	57	13.3%
Average	75	17.5%
good	63	14.7%
excellent	85	19.8%

Table 1 shows the distribution of the subjects' information technology scores. The scores of most students (65.5%) are concentrated between "fail" and "average", showing a certain difference in grades.

Table 2. Demographic Characteristics in this Study

Demographic characteristics in this study			
Variable	***Data***	***N***	***Percent***

Demographic characteristics in this study			
Variable	***Data***	***N***	***Percent***
gender	Male	216	50.3%
	Female	213	49.7%
only child	Yes	113	26.3%
	No	316	73.7%

Table 2 shows the distribution of the sample. Most of the subjects were not the only child in their families, and there was almost no difference in the number of male and female subjects.

B. Instrument

The researchers used the Self-rating anxiety scale (SAS) to test the anxiety of subjects of different genders and family backgrounds. The anxiety scale consists of 20 questions, of which 5, 9, 13, 17, and 19 are reverse test questions. After adjustment, the researchers analyzed the internal consistency of the scale and obtained a Cronbach's Alpha coefficient of 0.806, indicating that the scale has good internal consistency and is suitable for this study.

Iii. Results

The researchers used SPSS software to analyze the results. Specifically: (1) The researchers used factor analysis to detect the specific components of anxiety and classified the questionnaire questions; (2) The researchers used Spearman correlation to detect the correlation between the various components of the independent variable anxiety, as well as the correlation between the independent variable anxiety and the dependent variable information technology achievement (ITO); (3) The differences in information technology achievement and anxiety levels based on gender and whether or not the child was an only child were detected.

A. The Five Dimensions of Anxiety

Table 3. The Five Dimensions of Anxiety

Components of Anxiety Levels			
Name	***Definition***	***Items***	***Factor loading range***
Physical discomfort	It refers to discomfort in the limbs, head, back and other parts of the body such as trembling hands and feet, dizziness, headache, back pain, fatigue, etc.	Tremors in hands and feet (6), headache (7), fatigue (8), dizziness (11), fainting (12), tingling in hands and feet (14)	0.59 - 0.79
Negative emotions	It refers to the negative emotions felt by an individual, such as tension, fear, annoyance, panic, etc.	Nervous and anxious (1), Fear (2), Panic (3), Feeling crazy (4)	0.57 - 0.77
Stable mood	Refers to calmness, no premonition of misfortune, no tension, good sleep, stable and positive emotions.	Peace of mind (9), no premonition of misfortune (5), warm and dry hands and feet (17), good sleep (19)	0.50 - 0.71
Emergency Response	Refers to the ability or performance of rapid response when faced with uncontrollable factors, such as blushing or having nightmares, due to lack of psychological preparation or not	Nightmares (20), hot and red face (18)	0.57 - 0.72

Components of Anxiety Levels			
	knowing how to deal with them.		
Physiological discomfort	It refers to discomfort related to the function of internal organs of the body, such as stomach pain, difficulty breathing, and polyuria.	Difficulty breathing (13), frequent urination (16), stomach pain and indigestion (15)	0.52 - 0.79

Table 3 presents the results of the factor analysis on the independent variable, anxiety, by extracting the contribution of each item to the questionnaire. It is concluded that anxiety consists of five dimensions: physical discomfort, negative emotions, stable emotions, stress response, and physiological discomfort. Physical discomfort and physiological discomfort belong to external body discomfort, while negative emotions, stable emotions, and stress response are psychological aspects.

• Physical discomfort refers to discomfort in the limbs, head, and back, such as tremors, dizziness, headaches, back pain, and fatigue. Items 6, 7, 8, 11, 12, and 14 all belong to the physical discomfort dimension, with factor loadings ranging from 0.59 to 0.79, reflecting high consistency and making it a core dimension for describing physical anxiety.

• Physiological discomfort refers to discomfort related to internal bodily organs, such as stomach pain, shortness of breath, and frequent urination. The factor loadings for this dimension range from 0.52 to 0.79, making it a core dimension for describing physiological anxiety.

• Negative emotions, stable emotions, and stress responses are psychological aspects, forming three important components of psychological anxiety. Negative emotions refer to negative feelings, such as tension, fear, irritation, and panic. Items 1, 2, 3, and 4 belong to the negative emotions dimension. Stable emotions refer to calmness, absence of bad premonitions, lack of tension, and good sleep, reflecting a stable and positive emotional state. Items 5, 9, 17, and 19 belong to the stable emotions dimension. Stress response refers to quick reactions or responses when facing uncontrollable factors, such as blushing or having nightmares, due to a lack of psychological preparedness or not knowing how to cope. Items 18 and 20 belong to the stress response dimension. The factor analysis results show that negative emotions (FLR = 0.57-0.77), stable emotions (FLR = 0.50-0.71), and stress response (FLR = 0.57-0.72) are core dimensions of psychological anxiety.

Additionally, the researcher will categorize the anxiety levels in each dimension of the sample into high anxiety and low anxiety groups for further study.

B. Correlation Between Different Dimensions of Anxiety Level

Table 4. Correlation Between Each Dimensions of Anxiety Levels

Correlation Between Each Dimension of Anxiety Level					
Variable	***NE***	***SM***	***POD***	***PD***	***ER***
Negative emotions (NE)	1.000	.180**	0.164**	0.546**	0.471**
Stable mood (SM)	0.180**	1.000	0.107	0.024	0.062
physiological discomfort (POD)	0.164**	0.107	1.000	0.356**	0.037
Physical discomfort (PD)	0.546**	0.024	0.356**	1.000	0.361**
Emergency Response (ER)	0.471**	0.062	0.037	0.361**	1.000

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Table 4 presents the correlation analysis results for the dimensions of anxiety levels, including Negative Emotions (NE), Stable Mood (SM), Physiological Discomfort (POD), Physical Discomfort (PD), and Emergency Response (ER). The results indicate the following：

• Negative Emotions (NE):NE has the highest correlation with Physical Discomfort (PD) (r = 0.546), showing a significant moderate positive correlation. This indicates that an increase in physical discomfort, such as headaches or trembling hands and feet, significantly enhances negative emotions. Alternatively, emotional negativity may directly contribute to physical discomfort.NE also has a significant moderate correlation with Emergency Response (ER) (r = 0.471), suggesting that individuals with higher levels of negative emotions are more likely to experience emergency responses such as blushing or nightmares.

Additionally, NE exhibits weaker correlations with Stable Mood (SM) (r = 0.180) and Physiological Discomfort (POD) (r = 0.164), reflecting that negative emotions may mildly affect emotional stability and physiological reactions.

• Stable Mood (SM):SM shows weak overall correlations with other dimensions, with a significant but weak relationship with NE (r = 0.180). It has no significant correlations with POD, PD, or ER, suggesting that SM is relatively independent in this study. This independence implies that SM is not strongly influenced by physical or emergency-related factors.

• Physiological Discomfort (POD): POD has a moderate correlation with PD (r = 0.356), indicating that physiological discomfort, such as stomach pain or difficulty breathing, may increase the intensity of physical discomfort. This relationship highlights the impact of anxiety on the overall physical state. POD shows a significant but very weak correlation with NE (r = 0.164).

• Physical Discomfort (PD): Physical Discomfort (PD) shows a significant moderate correlation with Negative Emotions (r = 0.546) and a significant weak correlation with Physiological Discomfort (r = 0.356) and Emergency Response (r = 0.361). This indicates that the sensation of physical discomfort may be a comprehensive manifestation of anxiety.

• Emergency Response (ER):ER correlates moderately with PD (r = 0.361), indicating that physical discomfort may intensify emergency response intensity or vice versa. However, ER has almost no correlation with SM and POD, suggesting that ER is mainly associated with negative emotions and observable physical factors rather than physiological or less apparent factors.

In summary, among the five dimensions of anxiety, NE, PD, and ER exhibit stronger correlations, suggesting that these three dimensions may collectively reflect the core characteristics of anxiety. While POD is related to PD to some extent, it shows weaker correlations with other dimensions and is primarily influenced by somatic factors. SM demonstrates weak and independent correlations, warranting separate consideration when analyzing its impact on anxiety.

C. Correlation Between Anxiety and Information Technology Outcomes

Table 5. Correlation Between anxiety Level and Students 'information Technology Outcomes (N=429)

Correlation Between Anxiety Level and Students' Information Technology Outcomes						
Variable	***NE***	***SM***	***POD***	***PD***	***ER***	***Anxiety***
ITO	-0.077	-0.293**	-0.143**	-0.043	-0.121**	-0.282**

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Table 5 presents the correlation between anxiety and STEM performance, represented by information technology outcomes (ITO). The results indicate the following:

• Both overall anxiety and its five specific dimensions — negative emotions, stable emotions, physiological discomfort, physical discomfort, and stress response — show a negative correlation with students' IT performance. This suggests that higher anxiety levels are associated with poorer IT results. Anxiety may negatively impact students' learning outcomes by disrupting attention, increasing stress, and reducing confidence.

• Among these dimensions, overall anxiety, stable emotions, physiological discomfort, and stress response are significantly correlated with students' IT performance. Stable emotions exhibit the strongest negative correlation with IT results (r = -0.293). This indicates that the calmer and more stable the emotions appear, the higher the anxiety levels might actually be, as students may suppress their anxiety rather than express it. Consequently,

unresolved anxiety might result in an outwardly calm demeanor but heightened inner turmoil. Physiological discomfort (POD) is significantly negatively correlated with IT performance (r = -0.143), suggesting that internal physical discomforts, such as difficulty breathing or stomach pain, may reduce learning efficiency and outcomes. Stress response (ER) is significantly negatively correlated with IT performance (r = -0.121), indicating that a heightened stress response may lead to feelings of shyness or nervousness during learning. Teachers could support students experiencing internal physical discomfort (e.g., stomach pain, breathing difficulties) or heightened stress responses by alleviating sources of stress to improve their IT learning performance and outcomes.

• In contrast, negative emotions (r = -0.077) and physical discomfort (r = -0.043) show no significant correlation with students' IT performance. Among these, physical discomfort exhibits the weakest negative correlation with IT results. This suggests that external physical discomforts, such as limb pain, dizziness, or headaches, have a minimal impact on IT performance. It is also possible that students displaying negative emotions benefit from timely psychological interventions, which mitigate the impact of these emotions on their learning outcomes. Teachers should pay more attention to students who do not exhibit obvious signs of anxiety but still perform poorly.

D. Gender-Based Differences in Anxiety

Table 6: Differences in Anxiety Levels Based on Gender (N=429）

Differences in anxiety levels based on gender							
Group				***Independent Samples Test***			***Independent Samples Effect Sizes***
Mean		***Std. Error***		***Levene's Test***	***t-test for Equality of Means***		***Conhen's d***
Male	***Female***	***Male***	***Female***	***p-value***	***p-value***	***t-value***	
1.7843	1.9005	0.02552	0.02927	0.040	0.003	-2.993	0.40179

Table 6 shows the differences in anxiety levels based on gender. Since Levene's test showed that the variances were not equal (p = 0.040<0.05), Welch's t-test was used for analysis. The results showed that:

• There was a significant difference in anxiety levels between men and women (t = -2.995, p = 0.003), and women (M = 1.9005, SE = 0.02927) had higher anxiety levels than men (M = 1.7843, SE = 0.02552).

• Gender had a medium effect size on anxiety levels (Cohen's d=0.40179). That is, there is a certain gap in the anxiety levels between men and women, but this gap is not very large and is at a medium level.

E. Differences Based on Being an Only Child

Table 7: Differences in Anxiety Levels Based on Whether there is Only one Child （N=429）

Differences in anxiety levels based on whether there is only one child							
Group				***Independent Samples Test***			***Independent Samples Effect Sizes***
Mean		***Std. Error***		***Levene's Test***	***t-test for Equality of Means***		***Conhen's d***
Yes	***No***	***Yes***	***No***	***p-value***	***p-value***	***t-value***	
1.8204	1.8497	0.42578	0.39839	0.0407	0.524	-0.639	0.40578

Table 7 shows the differences in anxiety levels based on different family structures. Levene's test showed that the variances were not equal (p=0.0407<0.05), so the t-test results with unequal variances were used. The results show that:

There is no statistically significant difference in the anxiety levels between only children and non-only children ($p=0.510 > 0.05$).

However, the effect size of the two groups is medium (Cohen's d=0.40578), indicating that there are still some actual differences in the anxiety perception of students with different family structures.

Iv. Conclusion and Discussion

This study found that anxiety comprises five dimensions: physical discomfort, negative emotions, emotional stability, stress response, and physiological discomfort. Physical discomfort and physiological discomfort fall under the physical category of anxiety, while negative emotions, emotional stability, and stress response belong to the psychological category.

Regarding the relationship between anxiety levels and information technology outcomes, the researchers concluded that anxiety levels were weakly negatively correlated with students' information technology outcomes. This finding aligns with the research of many scholars (Torkzadeh & Angulo, 1992; Cazan et al., 2016; Selinger & Gröstenberger, 2024). Specifically, emotional stability, physiological discomfort, stress response, and overall anxiety showed significant relationships with information technology outcomes, whereas negative emotions and physical discomfort did not show significant relationships. The researchers agreed with Halder (2018) that overall anxiety levels have a significant relationship with academic performance. Simultaneously, this study refuted Azeem's (2018) perspective regarding the significance of the relationship between anxiety and academic performance.

Concerning the interrelationships among various components of anxiety, the researchers observed that negative emotions were significantly and moderately positively correlated with physical discomfort and stress response. Emotional stability was weakly and significantly correlated with negative emotions but showed little to no correlation with physical discomfort, stress response, or physiological discomfort, making it relatively independent in the study. Physical discomfort was moderately and significantly correlated with negative emotions and weakly correlated with physiological discomfort and stress response, suggesting that physical discomfort may reflect a composite aspect of anxiety. Stress response had little relationship with emotional stability (SM) and physiological discomfort (POD). Physiological discomfort (POD) had a certain connection with physical discomfort (PD) but showed low correlation with other dimensions. Negative emotions (NE), physical discomfort (PD), and stress response (ER) were strongly interrelated, collectively reflecting the core characteristics of anxiety.

Regarding differences in anxiety levels based on gender and whether participants were only children, the researchers found that anxiety levels differed significantly between genders, with a medium effect size. Female students exhibited higher anxiety levels than male students. The researchers concurred with Selinger and Gröstenberger (2024), who argued that anxiety levels differ significantly by gender, with females exhibiting higher levels of anxiety than males. This study contradicted the findings of many researchers who claimed that males exhibit higher anxiety levels than females or that there is no significant gender difference in anxiety levels (Torkzadeh & Angulo, 1992; Cazan et al., 2016; Master et al., 2016; Arican, 2022).

At the same time, the researchers observed that anxiety levels differed to some extent based on whether participants were only children; however, these differences were not statistically significant.

This study identified and detailed the specific components of anxiety, providing a foundation for future research on the relationships between anxiety and other factors. While previous studies have predominantly focused on computer systems, research on computer performance has been limited. This study specifically analyzed information technology performance, contributing to the theoretical literature on anxiety, information technology, and the STEM field, while also supporting the practical application of STEM education.

The limitations of this study include the focus solely on analyzing information technology performance, without covering the broader STEM disciplines such as science, engineering, arts, and management. Secondly, this study only analyzed the anxiety variable, without excluding the potential influence of other factors such as students' learning motivation, curriculum design, and teaching methods on information technology outcomes. Thirdly, due to time and budget constraints, the sample size of this study was limited, and the research was confined to China. Lastly, the study employed a single research method, relying solely on quantitative methods.

As a result, the findings of this study should be interpreted with caution. Future research could explore the impact of variables such as students' learning motivation and teachers' instructional methods on performance in other STEM disciplines like science and arts.

Additionally, studies could include larger sample sizes across more countries and employ a mixed-methods approach that combines qualitative and quantitative research to enhance the generalizability and applicability of the results.

To reduce various forms of anxiety, enhance interest in STEM learning, and improve learning efficiency and academic performance, the following recommendations are provided for teachers, students, and parents:

1) For Teachers

a) Monitor Emotional Changes:

Monitor Emotional Changes: Teachers should not only identify and address signs of anxiety in students through timely psychological counseling but also pay attention to students who do not exhibit anxiety but perform poorly. For students showing physical discomfort, such as trembling or lack of focus, targeted interventions, counseling, or referrals to professional help should be provided.

b) Adjust Teaching Methods:

Create a relaxed and engaging classroom atmosphere during information technology lessons to reduce students' stress. For example, incorporate group collaboration or gamified learning activities to boost students' interest and motivation.

c) Provide Personalized Support:

Offer tailored guidance to help students manage anxiety and improve academic performance. For example, educators can enhance students' resilience by activating their goal-achievement motivation and fostering supportive peer interactions during STEM activities to promote learning (Zhan et al., 2024). Teachers should give extra patience and support to female students, non-only children, or those displaying emergency responses.

2) For Students

a) Develop Emotional Regulation Skills:

Learn techniques to manage emotions, such as deep breathing or meditation, to alleviate tension. Try to transform negative emotions into motivation for STEM learning.

b) Improve Time Management:

Create a structured study plan and avoid procrastination, which can cause anxiety. Build confidence by completing small, manageable tasks in stages.

c) Focus on Self-Discipline and Physical Health: Maintain good physical health through sufficient sleep, balanced nutrition, and regular exercise to reduce the impact of physical discomfort on learning efficiency.

3) For Parents

a) Communicate with Children:

Parents should frequently talk with their children to understand their academic pressures and psychological state, offering emotional support instead of blaming. Provide care and comfort to help children find solutions to their problems.

b) Create a Conducive Learning Environment:

Provide a quiet and comfortable study space at home, minimizing distractions and supporting children’s focus.

c) Encourage Healthy Hobbies:

Promote participation in activities like sports, music, or art to help children relieve stress, enhance psychological resilience, and stabilize emotions.

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