

The Relationship Between Growth Mindset and Academic Perseverance in Junior High School Students: The Mediating Role of Achievement Motivation

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Abstract

In order to investigate the current situation of academic perseverance of junior high school students, to understand the characteristics of academic perseverance of junior high school students, and to explore the relationship between growth mindset, achievement motivation, and academic perseverance, in order to put forward effective educational suggestions to improve the level of academic perseverance of junior high school students. Using the Growth Mindset Scale, Achievement Motivation Scale and Academic Perseverance Scale, a questionnaire survey was conducted on junior high school students in a middle school in Q and H cities, H province, by random sampling method. After the questionnaires were returned, data were analysed using spss26.0. The results of the study are as follows: (1) The academic perseverance of the subjects in this study was at a moderately high level, and they were both challenging but at the same time possessed sufficient coping ability when facing academic tasks. (2) Growth mindset, academic perseverance, and achievement motivation differed significantly on some demographic variables in terms of gender, being an only child, being a class officer, grade level, and grade rank. (3) There is a two-by-two positive correlation between growth mindset and academic perseverance and achievement motivation among middle school students. Growth mindset has a significant positive predictive effect on academic perseverance and achievement motivation. (4) Achievement motivation has a partial mediating effect between growth mindset and academic perseverance in junior high school students. The conclusion of the study suggests that the level of academic perseverance of junior high school students can be improved through the cultivation of growth mindset and the stimulation of achievement motivation.

Keywords: growth mindset, academic perseverance, achievement motivation, junior high school students

1. Introduction

Duckworth considers perseverance as an individual's ability to persevere and sustain

passion for ambitious goals (Xiao, F. F, 2021). She takes students as the subject of her study and proposes that the perseverance and resilience

that students demonstrate in the pursuit of their educational goals is called academic perseverance. Academic perseverance is domain-specific, mainly reflecting a special quality of perseverance in academics, emphasising that adolescents have the persistence, perseverance and determination in academics, as well as the courage to overcome adversity, and are able to maintain their passion and interest in their academic goals (Hongyu Liao, 2022). According to scholar Clark, academic perseverance refers to the determination, perseverance, resilience, and focus that students demonstrate when pursuing goals in the educational field (Clark, K. N., & Malecki, C. K., 2019). Kelly defines academic perseverance as a personal characteristic or skill that involves an individual's dedication to the pursuit of challenging, long-term goals in the educational field (Kelly, D.R., M.D. Matthews, & P.T. Bartone, 2017). Song Naiqing, a scholar in China, defines academic perseverance as the quality of being able to regulate an individual's learning behaviours, learning emotions and self-perceptions in learning, overcoming various difficulties and setbacks encountered in learning, and striving to achieve long-term learning goals (Song Naiqing, Zhao Qiuhong & Luo Shiyan, 2020). Perseverance is considered to be an important positive psychological quality that transcends the influence of intellectual factors on an individual's academic achievement and performance (Von Culin, K. R., Tsukayama, E., & Duckworth, A. L. 2014). Academic perseverance, as a quality of perseverance in specific academic domains, can more accurately predict students' performance in academics. Based on this, Kelly et al. defined academic perseverance as the determination and resilience that an individual possesses when pursuing challenging goals in the educational domain. Most of the previous research results show that junior high school students have moderately high levels of academic perseverance, but there are still some students with low levels of academic perseverance. Low levels of academic perseverance affect individuals in many ways. For example, on the one hand, some students will affect their self-perception and self-evaluation, which will lead to the conflict between the ideal self and the real self, which will lead to negative emotions such as anxiety and depression, and will seriously endanger their physical and psychological health; on the

other hand, due to the low level of academic perseverance of some junior high school students, their parents' expectations of their education can not be met, which will affect the parent-child relationship; thus, it can be seen that the positive psychological qualities of academic perseverance for junior high school students is a key factor in the growth of the student's academic development. Thus, it is clear that the positive psychological quality of academic perseverance is the key to the growth and progress of junior high school students (Chengqing Wang, 2021), and the cultivation and establishment of the quality of perseverance is of great value to the future development of junior high school students (Lin Wanru, 2021). Therefore, this study focuses on investigating the current situation of junior high school students' academic perseverance quality, exploring the various factors affecting academic perseverance, and then proposing targeted educational recommendations.

Dweck was one of the first experts to propose that individuals possess a growth mindset, believing that intelligence or ability can be completely improved and enhanced through continuous effort, and their focus is on the process of learning rather than simply achieving performance goals. After problems with performance or good results, they neither give up on themselves nor become proud, but continue to learn and grow in the process of achievement, enjoying the joys of endeavour (Zhao, Yafei, et al., 2022). Tend to attribute positively when assessing successes and failures and see difficulties and challenges as opportunities to improve skills and have the resilience to overcome setbacks. Based on the core definition of growth mindset proposed by Dweck, our scholars have integrated it with different disciplines such as education and management, and have provided conceptual explanations for specific subject areas. This approach helps to better understand and apply the concept of growth mindset, so as to design and implement curriculum teaching that is more in line with the reality of specific disciplines. For example, Liu Ying-shan combines chemistry teaching with growth mindset, which she sees as an attitude of belief that chemistry learning ability can be improved (Liu, Ying-shan, 2020). Sun Shengnan elaborated on growth mindset in biology teaching, and he believed that growth mindset in biology learning is a series of ways

and means that students adopt to reflect their thinking styles by setting reasonable goals to achieve academic progress (Sun Shengnan, 2020). Individuals with a growth mindset hold the view of ability growth, they believe that intelligence is unknown, has the characteristics of growth, moulding and regulation, can be improved through hard learning and training, and will develop and change with individual efforts and experiences (Mindset: the new psychology of success, 2006). In recent years, growth mindset as a non-cognitive factor has attracted more and more attention from scholars (Liu, Y. M., Liu, H. R., & Zhang, P, 2021). In Zhai Xiangping's study, it is pointed out that growth mindset can mould the individual's perseverance quality (Yeh, R.M., K.H., 1992). This shows that there is a significant positive correlation between growth mindset and academic perseverance. Therefore, the independent variable of this study is growth mindset, and academic perseverance is the dependent variable to explore the relationship between the two in depth.

Atkinson believes that achievement motivation is a relatively stable tendency to pursue achievement or success and that success-seeking individuals have a strong desire to accomplish important goals and derive satisfaction from task success (Dong, J., et al., 2023). McClelland believes that achievement motivation is a fairly stable personality trait that can be socially acquired or learned (McClelland, M.M. & F.J. Morrison, 2003). Chongde Yang believes that achievement motivation belongs to a kind of social motivation, which refers to the intrinsic motivation and psychological tendency to endeavour and constantly challenge the difficulties in order to achieve excellence (Lin, Chongde, Yang & Huang, X. T., 2004). Ye Renmin believes that achievement motivation is a relatively stable personality trait, a learned positive or negative expectation related to a specific situation (Yeh, R.M., K.H., 1992). Together, the above perspectives emphasise the important role of achievement motivation as an important psychological trait in individual behaviour and learning processes. The different perspectives of understanding provide valuable food for thought for a deeper understanding of the nature and operating mechanisms of achievement motivation. To some extent, achievement motivation reflects the length of time an individual invests in completing

important tasks (Liang, L., 1996). A study of primary and secondary school teachers by Bailey Liu and Xiaoyue Cai pointed out that growth mindset was significantly related to achievement motivation, and individuals with high levels of growth mindset showed stronger motivation to pursue success, while individuals with fixed mindset were more inclined to avoid risk and failure (Liu, Baili Liu & Cai, Xiaoyue, 2011). The results of Zhai Xiangping's study showed that growth mindset had a positive predictive effect on achievement motivation, future time insight and perseverance (Zhai Xiangping, 2018). Zhao Yafei's study found that future time insight and achievement motivation acted as chain mediators between growth mindset and perseverance (Zhao, Yafei, et al., 2022). This shows that there is a significant positive correlation between achievement motivation and academic perseverance. Therefore, this study explores the relationship between growth mindset and academic perseverance in junior high school students by using growth mindset as the independent variable, academic perseverance as the dependent variable, and achievement motivation as the mediator variable, so as to propose scientific educational suggestions.

Growth mindset is significantly and positively related to perseverance. Domestic scholars Peng Jiayi conducted an intervention study on junior high school students, and the results showed that growth mindset significantly and positively affects perseverance (PENG Jia-yi, 2022). Zhai Xiangping's study pointed out that growth mindset can mould the individual's quality of perseverance (Zhai Xiangping, 2018). Lee and Kwon pointed out in their study that growth mindset positively predicts high school students' perseverance (Lee, et al., 2016). Kim took Korean high school students as the research subjects, and the findings showed that growth mindset can have an effect on academic burnout through the mediating role of academic perseverance (K.T., K., 2020). Many previous studies at home and abroad have confirmed that growth mindset is significantly and positively correlated with perseverance (Wang, R. X., 2023), and academic perseverance is the concretisation of the quality of perseverance in academics. Therefore, this study can hypothesise that growth mindset positively predicts the level of academic perseverance of junior high school students.

Zhao Yafei's study showed that growth mindset

positively predicts achievement motivation (Zhao, Yafei, et al., 2022). The study by Dweck et al. proposed a model of motivation in the domain of intellectual achievement, which divides achievement goals into two aspects: learning goals and performance goals. Learning goals are aimed at acquiring knowledge and skills and developing personal competence, while performance goals are aimed at demonstrating an individual's ability to complete a specific task. According to the model, an individual's motivation depends heavily on their achievement goal orientation, i.e., whether they are pursuing learning goals or performance goals. Growth mindset, on the other hand, is closely related to learning goals because growth mindset focuses on the development and progress of the individual and views failure as an opportunity to learn and grow rather than an insurmountable obstacle. Growth mindset for the individual student tends to make students pursue learning goals in terms of both the acquisition of knowledge and skills and the development of personal competence. This learning goal-oriented motivation is consistent with the Implicit Idea-Achievement Goal Orientation-Motivation Model, which emphasises the individual's attitude and response to challenges and difficulties. In addition, Liu Baili and Cai Xiaoyue's study on primary and secondary school teachers found that growth mindset has a significant impact on achievement motivation, and individuals with a high level of growth mindset show stronger motivation to pursue success, while individuals with a fixed mindset are more inclined to avoid risks and failures (Liu, Baili Liu & Cai, Xiaoyue, 2011).

Zhai Xiangping's study found that achievement motivation was significantly and positively related to academic perseverance (Zhao, Yafei, et al., 2022). Perseverance plays a mediating role in academic motivation and academic achievement, and persistence is significantly correlated with achievement motivation, which, as an intrinsic driving force, is manifested mainly through the degree of effort and persistence in individual behaviour (Bei Pingli, 2013). It has been pointed out that, to some extent, achievement motivation reflects the length of time an individual invests in completing tasks that are important to him or her (Von Culin, K. R., Tsukayama, E., & Duckworth, A. L., 2014). This suggests that

achievement motivation not only influences individuals' behavioural performance, but also reflects how much they value and invest in their goals.

2. Research Methods and Subjects

2.1 Research Subjects

Three hundred junior high school students in Q and H cities of H province were selected as the research subjects, with an age range of 12-16 years old, and a total of 260 valid questionnaires were collected, with an effective recovery rate of 86.67%. Among them, 122 (46.9%) were boys and 138 (53.1%) were girls; 60 (23.1%) were in the first year of junior high school, 114 (43.8%) in the second year of junior high school and 86 (33.1%) in the third year of junior high school. Academic performance was in the upper stream 74 (28.5%), middle stream 128 (49.2%) and lower stream 58 (22.3%).

2.2 Research Instruments

2.2.1 Growth Mindset Scale

The Growth Mindset Scale developed by Dweck et al. was chosen to contain six items, three of which measure growth mindset and the other three measure fixed mindset, which were reverse scored. The scale is scored on a 6-point scale, with 1 being "completely disagree" and 6 being "completely agree". Higher scores indicate a preference for growth mindset. The synthetic reliability of the growth mindset index scale was 0.61, with a 95% confidence interval of [0.53, 0.68].

2.2.2 Achievement Motivation Scale

The Achievement Motivation Scale compiled by Norwegian scholars Gjesme and Nygard, which was translated and revised by Ye Renmin, was used, which was divided into two dimensions: pursuit of success and avoidance of failure, with a total of 30 items, 15 questions for each dimension, and a 5-point scale, ranging from "not conforming to any of them" to "conforming completely". The higher the score, the stronger this type of motivation, the scale has a split-half reliability of 0.77 and a validity of 0.58 (Zhang Lifan, et al., 2017). The synthetic reliability of the achievement motivation scale for this measurement was 0.79 with a 95% confidence interval of [0.75, 0.82].

2.2.3 Academic Perseverance Scale

The Academic Perseverance Scale developed by Kelly was chosen, which is a unidimensional

scale consisting of 10 items, and the questionnaire adopts a 5-point scale, with 1 standing for “not conforming at all” and 5 standing for “conforming completely”, and the higher the score, the higher the level of perseverance. The synthetic reliability of the Academic Perseverance Scale was 0.85, with a 95% confidence interval of [0.82, 0.88].

2.3 Research Methods

SPSS 26.0 was used to enter and process the collected data and Process was used for correlation analysis and testing of the model.

3. Results and Analyses

3.1 Common Method Bias Test

In order to verify whether the effect of the recovered questionnaire is in line with the study, the results of Harman one-way test of the data

show that there are 12 factors with eigenvalues greater than 1, and the first factor is 13.89%, which is less than 40%. It shows that the questionnaire has validity and scientificity and meets the test criteria.

3.2 Correlation Analysis Among Variables

Correlation analysis of growth mindset, achievement motivation and academic perseverance was conducted through the statistical method of Pearson's product-difference correlation, and growth mindset was positively correlated with academic perseverance, growth mindset was significantly positively correlated with achievement motivation, and academic perseverance was significantly positively correlated with achievement motivation. The results are shown in Table 1.

Table 1. Correlation of Growth Mindset, Achievement Motivation, and Academic Perseverance

	<i>M</i>	<i>SD</i>	Growth mindset	Academic perseverance	Achievement Motivation
Growth Mindset	3.09	0.73	1		
Achievement Motivation	3.24	0.44	0.36**	1	
Academic perseverance	3.34	0.65	0.23**	0.37**	1

Note: $p < 0.05^*$, $p < 0.01^{**}$.

3.3 Test of Mediating Effect of Achievement Motivation

The mediating validity of achievement motivation in the relationship between growth mindset and academic perseverance was tested

using Model 4 (Model 4 is a simple mediation model) in the SPSS macro prepared by Hayes (2012), controlling for gender, only child, and grade level, as shown in Table 2.

Table 2. Mediation model of achievement motivation in the relationship between growth mindset and academic perseverance

Regression equation (N=260)		Fit Indicator			Coefficient Significant	
Outcome variable	Predictor variable	<i>R</i>	<i>R</i> ²	<i>F</i>	β	<i>t</i>
		0.36	0.13	4.66 ***		
Academic perseverance	Gender				0.16	2.08*
	Grade				-0.09	-1.08
	Growth mindset				0.22	4.21 ***
		0.38	0.14	5.19***		
Achievement Motivation	Gender				0.01	0.20
	Grade				0.01	0.41

	Growth mindset			0.21	6.05 ***
		0.49	0.24	8.64 ***	
Academic	Gender			0.16	2.14*
Perseverance	Grade			-0.10	-2.07*
	Growth mindset			0.11	2.07*
	Achievement Motivation			0.53	5.95***

Note: All variables in the model are standardised Z-score treated and brought into the regression equation, below.

Table 3. Decomposition of total, direct and mediating effects

	Effect Value	Boot standard error	Boot lower limit	Boot upper limit	Relative Effect Value
Total effect	0.22	0.05	0.12	0.33	
Direct effect	0.11	0.05	0.01	0.21	50.00 per cent
Achievement Motivation Mediation Effect	0.11	0.03	0.06	0.17	50.00 per cent

Note: All values are retained in two digits by rounding, same below.

The results (see Table 3) showed that the effect of growth mindset on academic perseverance was significant for junior high school students ($\beta=0.22$, $t=4.21$, $p<0.001$) and remained significant after putting in the mediator variable ($\beta=0.11$, $t=2.07$, $p<0.05$). The positive predictive effect of growth mindset on achievement motivation was also significant ($\beta=0.21$, $t=6.05$, $p<0.001$). In addition, the upper and lower bounds of the bootstrap 95% confidence intervals for the direct effect of growth mindset

on the impact of academic perseverance and the mediating effect of achievement motivation did not contain 0 (see Table 3). The data suggest that, on the one hand, growth mindset directly predicts academic perseverance and, on the other hand, growth mindset predicts academic perseverance through the mediating effect of achievement motivation. This direct effect (0.11) and mediating effect (0.11) accounted for 50.00% and 50.00% of the total effect (0.22), respectively.

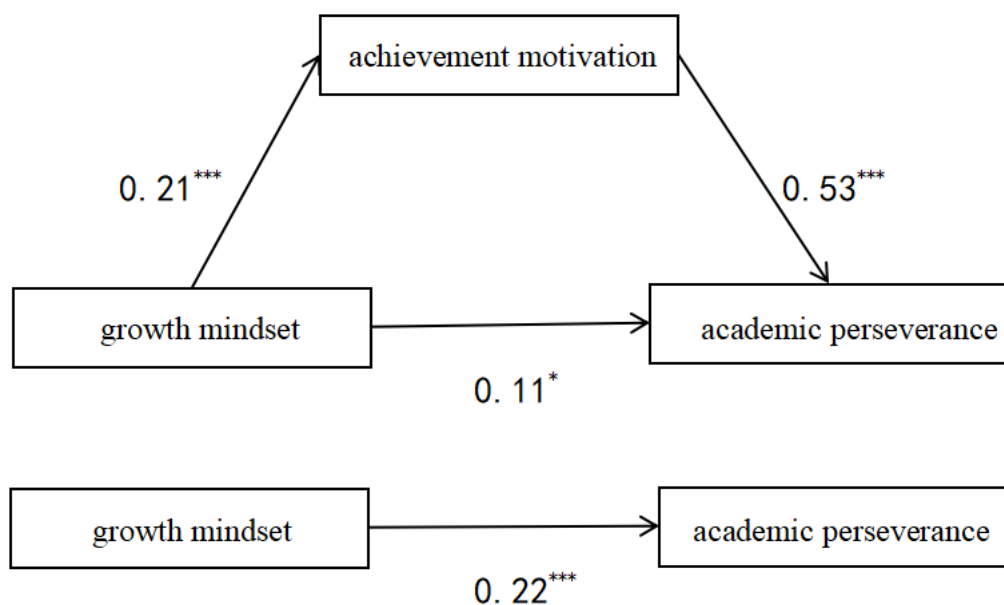


Figure 1. Path diagram showing the mediating effect of achievement motivation

4. Discussion and Suggestions

4.1 Conclusion of the Study

Through the investigation of the current situation of middle school students' growth mindset, academic perseverance, and achievement motivation, the test of demographic differences of each variable, and the analysis of the relationship between the variables, the following conclusions are drawn: (1) The academic perseverance of the subjects of the study is at a moderately high level, and when facing the academic tasks they are both challenging but at the same time they have enough coping ability. (2) Growth mindset, academic perseverance, and achievement motivation differed significantly on some demographic variables, such as gender, being an only child, being a class officer, grade level, and grade rank. (3) There is a two-by-two positive correlation between growth mindset and academic perseverance and achievement motivation among middle school students. Growth mindset has a significant positive predictive effect on academic perseverance and achievement motivation. (4) Achievement motivation has a partial mediating effect between growth mindset and academic perseverance among junior high school students.

4.2 Discussion of Results

A correlation analysis was conducted between growth mindset, achievement motivation, and academic perseverance of junior high school students. The results show that there is a significant positive correlation between these three variables. Students with higher levels of growth mindset tend to also have stronger achievement motivation and academic perseverance, and vice versa.

There was a significant positive correlation between growth mindset and academic perseverance among junior high school students, a result that is consistent with the findings of Wu Jing's study (Jing Wu, 2023). The higher the growth mindset score, the more the individual desires to achieve success, shows more perseverance in learning, and scores higher in academic perseverance. Students with a growth mindset carry a full passion for the learning process, actively discuss problems with teachers and classmates, and enjoy pursuing challenging tasks. When faced with hardships and setbacks in learning, they respond with a

positive and optimistic mindset and do their best to find solutions to problems. The growth mindset tends to view challenges as opportunities for growth. This positive mindset will stimulate individuals' intrinsic achievement motivation and prompt them to work hard to achieve their academic goals. At the same time, this positive mindset enhances students' academic fortitude, enabling them to face difficulties with greater patience and perseverance. As a result, individuals with a growth mindset have increasing levels of academic perseverance as they progress in their studies. The higher the level of growth mindset, the more capable individuals are of overcoming difficulties when facing academic setbacks, and the quicker they find solutions to problems and the best way to solve them. There is a significant positive correlation between growth mindset and achievement motivation in junior high school students, and the higher the level of growth mindset, the higher the total achievement motivation score. Growth mindset people are more inclined to see setbacks as opportunities to learn and grow rather than the end of failure. Instead of being knocked down by setbacks, they face them positively and learn from them. Students with a growth mindset are typically more resilient and adaptable to adversity, and are more likely to face challenges and learn from them rather than be knocked down by them. This resilience and adaptability to adversity may enhance their academic fortitude, enabling them to maintain a positive attitude and sustained effort in the face of difficulties. As a result, they are more motivated and patient to overcome challenges and difficulties, thus finding solutions to problems more quickly. Moreover, growth mindset people are open to new knowledge and skills and are willing to learn and explore hard. They believe that their efforts and learning can improve the status quo. A growth mindset is usually associated with a clear perception of future goals and the active pursuit of them. This goal-orientation may stimulate intrinsic achievement motivation within individuals, driving them to work hard to achieve their academic goals. At the same time, this goal-orientation may also promote academic perseverance in students as they become aware of the effort and persistence required to achieve their goals. As a result, they will be more proactive in finding solutions and the best way

to deal with problems. They are willing to try different approaches and learn and improve from them. In addition to this, achievement motivation is significantly positively correlated with academic perseverance, a result that is consistent with the findings of Sun Mengmeng (Sun, M. M., 2021). Higher achievement motivation scores indicate that individuals are able to show more perseverance and determination in the face of academic difficulties, actively explore them, and are willing to take the initiative to maintain a moderate level of achievement motivation so as to achieve academic success.

The results of the study revealed a significant positive predictive effect between growth mindset, academic perseverance, and achievement motivation among middle school students. Specifically, there was a significant positive correlation between growth mindset and academic perseverance, suggesting that individuals who are more inclined to growth mindset tend to show greater academic perseverance. There was also a significant correlation between growth mindset and achievement motivation, suggesting that individuals with a growth mindset tend to have stronger achievement motivation in the unique domain of academics.

Upon further testing, the results of the study showed that achievement motivation played a partial mediating role between growth mindset and academic perseverance. This implies that growth mindset influences the level of academic perseverance by affecting achievement motivation. Specifically, individuals with growth mindset are more likely to show higher achievement motivation, which makes them more motivated to pursue academic success; at the same time, higher achievement motivation also leads to higher academic perseverance, as they believe that they can achieve their goals through hard work and perseverance, which makes them more motivated to face the challenges and difficulties in their studies, and therefore, they show stronger academic perseverance. In turn, growth mindset indirectly promotes the development of academic perseverance by stimulating students' achievement motivation. This finding highlights the critical role of achievement motivation in the relationship between growth mindset and academic perseverance, and provides important insights for educational practice. The findings

validate the hypothesis that achievement motivation mediates growth mindset and academic perseverance. The reason for this hypothesis may be that with the spread of education, educators are paying more attention to the development of growth mindset in their students and encouraging students to have moderate achievement motivation. At the same time, educators are able to care not only about students' achievement, but also about students' physical and mental health, and actively encourage students when they face academic setbacks, so that students continue to grow in the process, and the level of academic perseverance continues to increase. Therefore, the study shows that the level of academic perseverance of junior high school students can be improved by cultivating their growth mindset or by enhancing their achievement motivation.

4.3 Suggestions and Insights

4.3.1 Change the Inherent Mode of Thinking and Cultivate a Growth Mindset

First of all, in family education, on the one hand, it is necessary to cultivate children's imagination from childhood. For example, by cultivating the habit of reading in order to improve children's imagination and thinking ability. Reading, as a basic way for children to learn about the world, facilitates their exposure to books on a variety of topics, which can broaden their horizons and foster critical and creative thinking, thus demonstrating deeper and more original insights when analysing and solving problems. On the other hand, the practice of incorporating a growth mindset into daily life is crucial. Parents can share with their children stories about endeavours, challenges and failures, and emphasise the importance of maintaining an optimistic and positive attitude in the face of setbacks and difficulties.

Secondly, in school education, on the one hand, teachers should help students develop divergent thinking and a sense of creativity in the education process so as to enhance their ability to identify, analyse and solve problems. By exposing students to a variety of different problems and challenges, they can stimulate their thinking and learn to solve problems using a variety of methods and really learn by touch in order to improve their ability to solve practical problems. On the other hand, educators should create a positive learning atmosphere and

campus environment so that students can live and work in a relaxed atmosphere. At the same time, emotional education should be incorporated into educational activities, and emphasis should be placed on cultivating students' emotional literacy and giving them sufficient encouragement and support.

Again, individual students should study diligently and hard on the one hand, and diligence and hard work are the core of growth mindset, individuals should devote their energy and time to their own goals and keep working hard for them, and they should take the initiative to accept all kinds of challenges, and regard the challenges as an opportunity to learn and grow rather than the end of failure. When faced with challenges, students should think about how to learn from them, grow and improve themselves. On the other hand, when an individual succeeds in the pursuit of a goal, he or she should learn to affirm himself or herself that this is the result of his or her own efforts, that my future has unlimited possibilities, and that I believe I can do better and better, thus developing a positive mindset.

4.3.2 Understand Students' Interests and Needs, and Cultivate Moderate Achievement Motivation

First of all, in school education, teachers should deeply understand all students, communicate with them, listen to their opinions and ideas, and understand their needs and interests and preferences for learning. Targeted learning goals should be set according to students' interests and needs. Students should also be encouraged to focus on the learning process rather than the outcome. Emphasise the importance of effort, perseverance and learning methods so that students will realise that success comes through continuous effort and learning.

Secondly, in home education, parents can learn about their children's interests by observing their daily behaviour. Pay attention to what their children usually like to do, what kind of music they like to listen to, what kind of books or films they like to watch, and let their children take the initiative to do hands-on practice and listen to their words in different ways, so that they can realise the actual meaning and importance of the goals in the process of activities and experiences, for example, by linking learning with the practice of life, so as to make students have the awareness of long-term and persistent warfare,

persist in putting in learning and working hard to improve the achievement motivation.

Again, individuals need to recognise that clear goals are the first step to success, so they need to clarify their values and visions and set specific, measurable and achievable goals for themselves. Values are the individual's views and beliefs about life and work, and vision is the expectation and plan for the future. Clarifying values and visions can help individuals to know themselves better. Students should proactively seek feedback and suggestions from others and, based on the feedback, adjust and improve their learning methods and behaviours in a timely manner to enhance achievement motivation.

4.3.3 Collaborative Parenting Between Home and School to Improve Students' Academic Perseverance

Firstly, in school education, on the one hand, academic perseverance can be actively integrated into other related programmes through subject penetration. According to the connotation of academic perseverance, teachers can carry out specific perseverance counselling in various humanities, science and social courses through cultivating interest, setting clear goals, systematic practice, active participation in activities and practical exercises. On the other hand, school newspapers, slogans and drawings posted in corridors, and tweets on public websites can be used to enhance students' and parents' awareness of perseverance in a subtle way.

Secondly, in family education, parents should adopt a positive attitude. On the one hand, they should cooperate with the school's educational work, actively participate in parent-teacher conferences, class meetings, expert lectures and other activities, and constantly improve their own educational awareness and ability. Parents can also communicate with school teachers on a regular basis to share their children's learning and growth experiences, discuss how to help their children improve their level of academic perseverance, learn to use scientific education methods to educate their children, and actively participate in their children's education. On the other hand, parents should also actively communicate with their children's teachers to discuss how to improve their children's academic perseverance, so as to provide better support and guidance for their children's growth and development.

Once again, individuals should set clear goals, make specific, quantifiable plans, choose goals they really love, and consistently implement them. Liking is not the same as love, only in the like to continue to persist, will develop into love. And the quality of perseverance that comes from one's love will give one the courage and confidence to overcome difficulties. The key to enhancing students' level of academic perseverance lies in developing their self-discipline and perseverance, establishing good study habits, ensuring that they study regularly every day, and that they do not retreat when they encounter difficulties but face them bravely and look for solutions. The tendency of procrastination and laziness is overcome through strong determination and relentless endeavour.

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