

An Empirical Investigation into the Relationship Between Positive Traits Among Adolescents and Academic Achievement: A Case Study of T City in China

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Abstract: This study explores the association between adolescents' academic achievement and various positive traits, including learning interest, emotional regulation, learning habits, and interpersonal relationships. A comprehensive survey was conducted among 1465 fifth-grade students (53% male, 47% female) from 30 primary schools and 1243 ninth-grade students (52.5% male, 47.5% female) from 25 junior schools in T City, China, as part of the Educational Quality Monitoring Program. The findings indicate a positive predictive relationship between adolescents' positive traits and academic achievement. However, it is noteworthy that these positive traits demonstrate a negative correlation with the development of test anxiety and academic burden, potentially exerting a negative impact on students' academic performance. Furthermore, the results reveal a significant age difference in the manifestation of positive qualities, with younger students exhibiting a higher positive developmental level compared to their elder counterparts. Additionally, each positive quality exhibits varying effects on academic achievement, displaying differences across categories and subjects. Importantly, the correlation between negative developmental outcomes and academic achievement is not exclusively negative; there is a likelihood of a positive association.

Keywords: Adolescent; Positive traits; Academic achievement; Positive youth development

Introduction

The attainment of academic success holds paramount significance for adolescents as it serves as a pivotal foundation for their transition into fully engaged participants in the economic, social, and civic realms of contemporary society (Li et al., 2010). In light of escalating employment competition and societal pressures, modern Chinese parents have increasingly emphasized the educational trajectory of their children. Consequently, the overall quality of youth education in China has emerged as a subject of enduring national concern. Despite this, research addressing the factors that contribute to students' academic success has not received adequate attention within the Chinese context. Prevailing emphasis has been placed on examination-oriented education, a trend that may detrimentally impact the educational trajectories of youth. Against this backdrop, this paper specifically concentrates on exploring how school engagement serves as a mediating factor in the influence of personal attributes on adolescents' perceived academic competence, employing a positive psychology perspective.

Background

With the objective of shifting the focus of psychology from solely addressing the repair of negative aspects of life to the cultivation of positive qualities (Seligman and Csikszentmihalyi, 2000), positive psychology is vigilant not only in addressing serious psychological issues but also in encompassing the entirety of the human population (Guan et al., 2009). The examination of positive traits, involving research on the inherent strengths and virtues of ordinary individuals, stands out as a primary focus within the realm of positive psychology (Sheldon and King 2001).

In contrast to the traditional scope of psychology, the positivism of positive psychology encompasses three key dimensions. Firstly, it entails a paradigm shift from the traditional focus on negative psychological problems in the early stages of psychological research. Secondly, it calls upon researchers to delve into the exploration of the positive aspects of human psychology. Thirdly, it emphasizes adopting a positive approach to provide appropriate explanations for psychological problems and derive positive significance from such explanations. Existing literature indicates that positive traits constitute a crucial aspect of adolescents' positive development (citation), and positive youth development (hereafter, PYD) seeks to understand how these positive traits can facilitate optimal outcomes in the growth process of adoles-

cents. Consequently, researchers have dedicated considerable effort to studying the composition of adolescents' positive traits and devising measures to assess individual positive qualities.

Notably, PYD has been conceptualized through various academic frameworks, with several theoretical models emerging over the past two decades. Examples include the 4-H Study of PYD—Head, Heart, Health, Hand (Catalano et al., 2002), the Five Cs model of PYD—Competence, Confidence, Connection, Character, Caring (Phelps et al., 2009), and the 24 Character Strengths categorized into six virtues: wisdom and knowledge, courage, humanity, justice, temperance, and transcendence (Seligman, 2004).

While the aforementioned theoretical frameworks may vary in their research priorities, there is an unequivocal trend towards their increasing popularity among individuals dedicated to fostering the positive growth of young people within households, educational institutions, and youth-serving organizations (Bowers et al., 2010). Research affiliated with the 4-H Study of PYD has substantiated that imparting life skills to adolescents yields beneficial outcomes for their positive development (Lerner et al., 2005; Jeličić et al., 2007). Embracing the Five Cs model of PYD, which posits that every adolescent possesses the potential for positive development, underscores that a higher level of Five Cs positive traits correlates with elevated developmental outcomes (Lerner, 2004). The 24 Character Strengths framework posits that cultivating character strengths can mitigate the onset of mental disorders among adolescents (Seligman, 2002) and contributes significantly to individual well-being (Park, 2004), with an increasing body of evidence supporting the positive outcomes associated with these character strengths (Park and Peterson, 2008).

Simultaneously, the 40 Developmental Assets theory contends that adolescents endowed with a greater number of strengths exhibit more favorable developmental outcomes and engage in fewer problematic behaviors (Benson, 2003; Benson et al., 1998; Luster and McAdoo, 1996; Scales and Leffert, 1999).

Moreover, an extensive body of empirical research has consistently demonstrated the positive correlations between positive traits and various dimensions of adolescents' development, well-being, and academic achievement. For instance, the Five Cs model asserts that adolescents characterized by a constellation of positive traits are more likely to attain thriving or idealized developmental goals (Csikszentmihalyi and Rathunde, 1998), thereby contributing to their personal growth, family dynamics, and societal advancement (Lerner, 2004). Park et al. (2004) reported significant positive associations between student academic achievements and a range of strengths, including zest, self-regulation, hope, curiosity, love, leadership, civic spirit, fairness, integrity, insight, courage, love of learning, and prudence.

Contrastingly, Jeličić et al. (2007) identified negative correlations between the Five Cs and indicators of contribution, depression, and problematic behaviors, suggesting a nuanced relationship between positive traits and certain outcomes. Furthermore, Lewin-Bizan et al. (2010) reported that the strengths of social intelligence could serve as a preventive measure or reduce aggressive and antisocial behaviors.

Nevertheless, scholars hold divergent perspectives on the mechanisms through which positive qualities impact the academic success of adolescents. Notably, Li et al. (2010) and Zhang (2013) contend that positive qualities may either directly contribute to academic success or indirectly influence it through school engagement. In essence, the relationship between positive qualities and academic achievement is characterized by complexity and lacks universality. For example, Fredricks et al. (2004) reported a positive correlation between behavioral engagement and academic outcomes. However, recent evidence suggests that the strength of this association is contingent upon factors such as the method of measuring achievement and the racial/ethnic composition of study participants (Shernoff and Schmidt, 2008). Chase et al. (2014) extended this discourse by reporting that the predictive power of school engagement for grade point average (GPA) is less pronounced in African-American students compared to their European American counterparts.

In light of these nuanced perspectives, this study is specifically designed to delve into the intricate correlations between students' academic achievement and positive traits, including learning interest, emotional regulation, learning habits, and interpersonal relationships. Moreover, the study aims to explore strategies for mitigating negative developmental outcomes among adolescents, such as test anxiety and study burden.

Significance of the Study

As previously highlighted, positive traits exhibit a significant association with the healthy growth, well-being, and academic achieve-

ment of students. Furthermore, variables such as learning interests, learning strategies, self-efficacy, school engagement, and family background have been identified as notably interconnected with adolescents' academic achievement. However, prior research on academic achievement concerning these variables has predominantly been conducted in Western countries. Recognizing that the correlation between students' academic achievement and various contributing factors may be influenced by social-cultural aspects, there is a compelling need to investigate the associations between adolescents' academic outcomes and diverse elements of positive traits in different global contexts.

The present study was carried out in China as part of the Educational Quality Monitoring Program, where students predominantly experience Confucian heritage-based classroom environments. Consequently, results derived from Chinese students may exhibit variations when compared to those obtained from students in Western countries with individualistic cultural orientations. Cross-cultural investigations hold the potential to enhance the effectiveness of instructional practices by aiding teachers in leveraging positive traits to promote students' academic achievement.

Methods

Samples and data

The samples for this study were systematically chosen from a pool of 30 primary schools and 25 junior schools located in T City, China. The study encompassed 1465 fifth-grade students (53% male, 47% female) and 1243 ninth-grade students (52.5% male, 47.5% female). Data collection was executed by trained researchers, with participants assembled in their respective school classrooms to facilitate the administration of the questionnaire. Students were instructed to independently complete the questionnaire within a one-hour timeframe and were not permitted to leave the classroom during this period without valid reasons. Data processing involved the utilization of SPSS 21.0, and ConQuest Version 2.0 was primarily employed to calculate the Scaled Scores representing students' academic achievement.

Measures

Academic Achievement

Students' academic achievement was assessed through two sets of testing tools designed in accordance with the National Curriculum Standards for Chinese and Mathematics, respectively. To ensure comparability among students with varying test subjects, raw scores were converted into Scaled Scores. Each subject's (Chinese and mathematics) sample served as the norm, with a Scaled Score of 500 points and a standard deviation of 100 points. In Grades 5 and 9, Cronbach's alphas for Chinese were .76 and .74, respectively, and for Mathematics were .75 and .73, respectively.

Learning Interest

The analysis incorporated items from the Student Learning Interest Questionnaire (Sun, 2010), covering subscales for Chinese, Mathematics, and English. Participants rated the ten items for Chinese and Mathematics on a scale ranging from 1 (strongly like) to 4 (strongly dislike). For instance, an item measuring Chinese interest was "I like Chinese the best of all the subjects." In Grades 5 and 9, the rest-retest coefficients over a 2-month period for Chinese were .80 and .82, respectively, and for Mathematics were .76 and .83, respectively. Cronbach's alphas for Chinese were .82 and .86, respectively, and for Mathematics were .85 and .86, respectively.

Emotional Regulation

Emotional regulation encompassed the subscales of self-efficacy, willpower, and time management skills. Self-efficacy was measured using four items from the General Self-Efficacy Scale (GSES) Chinese version revised by Zhang and Schwarzer (1995). An example item is "I always say 'I do' or 'I can' when I encounter problems in daily life." Willpower was assessed through seven items from the Willpower Scale revised by Lu and Liang (2008), with a sample item being "I can do something important for a long time even if it's boring." Time management skills were gauged by eight items from the Adolescence Time Management Disposition Scale compiled by Huang and Zhang (2001), with a sample item stating, "Every day I can study according to my own plans." Response formats ranged from 1 (strongly inconsistent) to 4 (strongly consistent). Higher scores indicated higher levels of self-efficacy, willpower, and time management skills. In Grades 5 and 9,

Cronbach's alphas for self-efficacy were .78 and .83, respectively; for willpower were .71 and .83, respectively; for time management skills were .72 and .78, respectively.

Learning habits

Learning habits were assessed using six items from the learning habit scale (Yan, 2011). Response formats ranged from 1 (never) to 4 (always), with an example item being "How often do you actively take part in group (class) discussions?" Higher scores reflected more favorable study habits. In Grades 5 and 9, Cronbach's alphas for learning habits were .71 and .89, respectively.

Interpersonal relationship

Interpersonal relationship was defined through a composite of three subscales: teacher-student relationships, peer relationships, and parent-child relationships. Eighteen items from the teacher-student relationships scale, developed by Chu (2006), gauged teacher-student relationships. The response format ranged from 1 (strongly disagree) to 4 (strongly agree), with an example item being "I get along very well with my Chinese/mathematics teacher at my school." Higher scores indicated a more positive teacher-student relationship. In Grades 5 and 9, Cronbach's alphas for Chinese were .79 and .86, respectively, and for mathematics were .77 and .82, respectively.

Peer relationships were measured using 18 items from the self-description questionnaire (Cheng et al., 1997), with the response format ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item was "Can you easily make new friends at school?" In Grades 5 and 9, Cronbach's alphas for peer relationships were .79 and .81, respectively.

Parent-child relationships were assessed through 20 items from the Parent-Adolescent Communication Scale (An, 2004), with an example item being "Some teenagers think they can easily make friends with their father, but other teenagers don't think they can easily make friends with their father." The response format followed a four-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). In Grades 8 and 9, Cronbach's alphas for parent-child relationships were .87 and .85, respectively.

Test anxiety

Test anxiety was assessed using six items from the test anxiety scale (Guo, 2001). The response format for the items ranged from 1 (strongly inconsistent) to 4 (strongly consistent). Scores were categorized as follows: 0-6 points indicated no test anxiety, 7-12 points indicated mild test anxiety, 13-18 points denoted moderate test anxiety, and scores above 18 points indicated severe test anxiety. An example item is "I was on pins and needles a few days before the exam." In the current study, the Cronbach's alpha for test anxiety in Grade 5 was .83.

Study burden

Study burden was gauged using fifteen items from the study burden scale (Zheng et al., 2004). Response formats ranged from 1 (never) to 4 (severe degree). An example item is "How do you think about your daily homework?" Higher scores indicated a more pronounced study burden. In Grades 5 and 9, Cronbach's alphas for study burden were .88 and .89, respectively.

Results

Study Objective

The primary aim of this investigation was to discern the impact of learning interest, emotional regulation (encompassing self-efficacy, willpower, and time management skills), learning habits, interpersonal relationships (specifically, teacher-student relationships, peer relationships, and parent-child relationships), test anxiety, and study burden on the academic achievement of Chinese adolescents in Grades 5 and 9. The study sought to address three central inquiries: first, the applicability of Positive Youth Development (PYD) theory in gauging Chinese youth; second, the roles of positive qualities in connecting to academic competence; and third, the relationships between academic achievement and outcomes associated with negative development. Although item response rates were below 2% across the variables in this report, this had no discernible impact on the overall reliability of the study's conclusions.

Testing correlations between learning interest and academic achievement

To assess the hypothesis positing a significant correlation between learning interest and academic achievement, we adhered to the guidelines outlined by He Juan (2009) and Tang Yawei (2012) for testing interaction effects. According to He Juan (2009), the first criterion necessitates a positive correlation between the predictor and the outcome. Tang Yawei's (2012) second criterion asserts that learning interest

should positively predict adolescents' academic achievement; that is, higher levels of learning interest should correspond to better academic performance. Figures 1 and 2 encapsulate the outcomes of the significant correlation tests conducted. Subsequent analysis revealed a decline in students' learning interest with increasing age, particularly in the domain of mathematics.



Correlation Testing: Emotional Regulation and Academic Achievement

Our hypothesis posited a variance in the developmental levels of positive qualities among adolescents during different periods. Figure 3 illustrates that the levels of students' self-efficacy, willpower, and time management skills in Grade 5 surpass those in Grade 9.

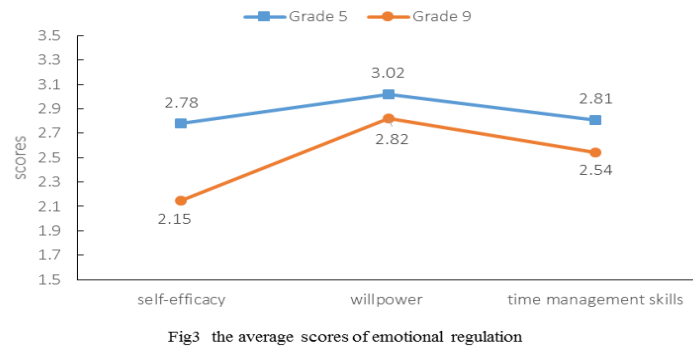


Fig3 the average scores of emotional regulation

Testing the Relationship between Positive Qualities and Expected Academic Competence

Subsequently, we conducted an analysis to assess the significance of the relationship between positive qualities and expected academic competence in Grades 5 and 9. Through in-depth correlation analysis, we observed that a heightened level of self-efficacy, willpower, and time management skills among youth was associated with improved academic achievements in both Chinese and mathematics. The coefficients supporting this finding are systematically outlined in Table 1.

Table 1 Correlations between the emotional regulation and academic achievement of adolescents

	Grade5(math)	Grade5(Chinese)	Grade9(math)	Grade9(Chinese)
self-efficacy	0.051**	0.039**	0.143**	0.039**
willpower	0.162**	0.167**	0.083**	0.072**
time management skills	0.182**	0.186**	0.063**	0.052**

Note: **p < .01

Correlation Testing: Learning Habits and Academic Achievement

Examining the correlations between learning habits and academic achievement revealed age-related differences in the developmental levels of learning habits. As depicted in Figure 4, the older the youth, the less favorable their learning habits. Specifically, the learning habits of adolescents in Grade 5 were superior to those in Grade 9.

To further investigate the relationship between learning habits and academic achievement, participants were categorized into two groups based on their learning habits: those with good learning habits and those with poor learning habits. The grouping criteria involved designating the highest-scoring 27% as the "good learning habits" group and the lowest 27% as the "poor learning habits" group. The analy-

sis unveiled that youth with commendable learning habits exhibited superior academic achievement compared to their counterparts with less favorable learning habits in both Grade 5 and Grade 9, as illustrated in Figure 5.

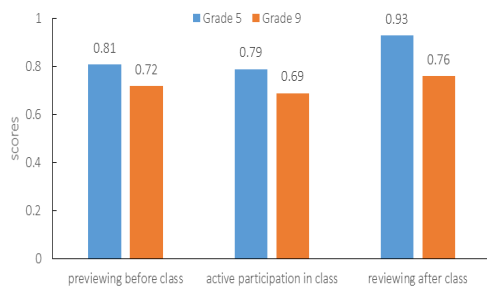


Fig4 average score of three learning habits

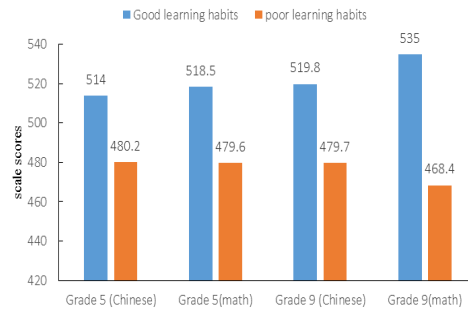


Fig5 correlations between learning habits and academic achievement

Correlation Testing: Interpersonal Relationship and Academic Achievement

Examining the correlations between interpersonal relationships and academic achievement unveiled notable distinctions between Grade 5 and Grade 9, as depicted in Figure 6. The average scores for teacher-student relationships (Chinese), teacher-student relationships (math), peer relationships, and parent-child relationships among Grade 5 adolescents were higher than those of their Grade 9 counterparts. However, the analysis also revealed a nuanced pattern, indicating that while adolescents in Grade 9 tended to have positive peer relationships, their teacher-student relationships were less favorable.

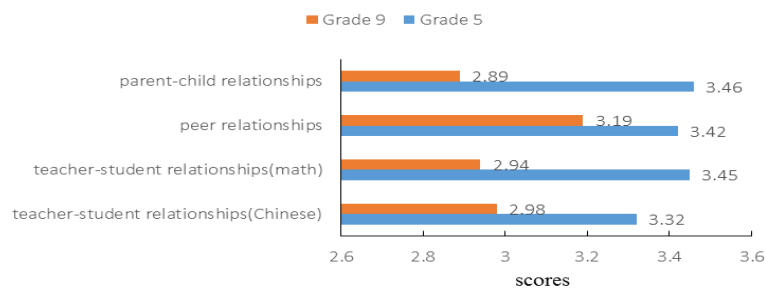


Fig6 average score of interpersonal communication

Correlation Analysis: Teacher-Student Relationship, Peer Relationships, and Parent-Child Relationship with Academic Achievement

Upon conducting correlation analyses between teacher-student relationships, peer relationships, parent-child relationships, and adolescents' academic achievement, we identified a positive correlation between these relationships and the performance in Chinese and mathematics among the youth. In simpler terms, a stronger teacher-student relationship, positive peer relationships, and supportive parent-child relationships were associated with higher scores in both Chinese and mathematics, as outlined in Table 2.

Table 2 correlations between the interpersonal communication and academic achievement of adolescents

	Grade5(math)	Grade5(Chinese)	Grade9(math)	Grade9(Chinese)
teacher-student relationships	0.143**	0.158**	0.216**	0.143**
peer relationships	0.157**	0.161**	0.103**	0.074**
parent-child relationships	0.088**	0.119**	0.178**	0.098**

Note:**p < .01

Correlation Testing: Negative Development Outcomes and Academic Achievement

Following the examination of correlations between various positive qualities and academic achievement, we extended our analysis to explore the correlation between academic achievement and negative development outcomes, specifically, test anxiety and study burden. As illustrated in Figure 7, our analysis of the correlation between adolescents' test anxiety and academic achievement revealed that students with mild test anxiety exhibited the highest academic achievement, followed by those without test anxiety, and then students with moderate and severe test anxiety.

The findings indicated that as the level of adolescents' test anxiety gradually increased, academic achievement declined, particularly in mathematics. Moderate and severe anxiety had a discernibly negative impact on their academic performance. Consequently, it is imperative for stakeholders such as schools, teachers, and parents to guide youth in adopting a correct perspective toward tests and provide additional psychological counseling to mitigate the adverse effects of anxiety on academic achievement.

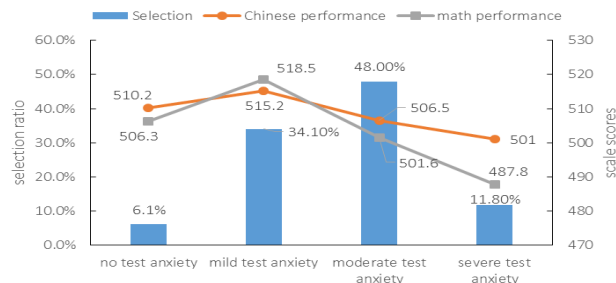


Fig 7 correlations between test anxiety and academic achievement

Correlation Testing: Study Burden and Academic Achievement

Our final round of testing revealed a substantial relationship between aspects of study burden in Grades 5 and 9 and academic achievement. As depicted in Figure 8, adolescents with higher levels of subjective study burden demonstrated lower scale scores; however, they exhibited superior learning performance in Grade 5. Notably, approximately 41% of youth in Grade 5 perceived their study burden as not heavy, while only around 20% considered it of “moderate degree” or “severe degree.”

In Grade 9, a noteworthy shift was observed, where 75.2% of youth who perceived their study burden as “relatively heavy” or “a little heavy” achieved the highest scale scores. Conversely, 24.8% of youth who considered their study burden as “not heavy” or “heavy” obtained lower scale scores, as illustrated in Figure 9.

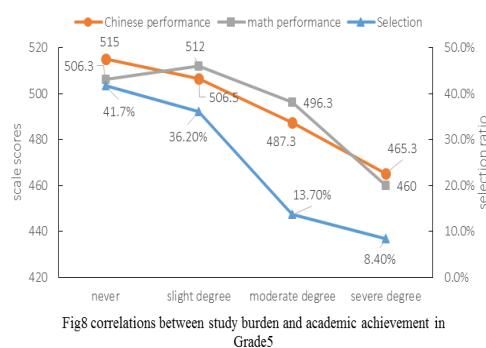


Fig8 correlations between study burden and academic achievement in Grade5

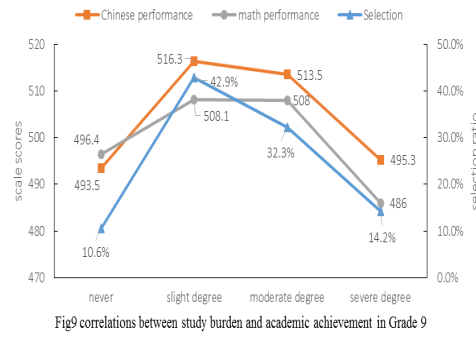


Fig9 correlations between study burden and academic achievement in Grade 9

Discussion

Positive Traits and their Impact on Adolescents' Academic Achievement

Positive traits play a pivotal role in fostering adolescents' academic success, as indicated by the positive correlation between Positive Youth Development (PYD) benefits and learning outcomes, social behavior, and overall competence. The findings revealed that higher scores in positive qualities tests were associated with enhanced academic achievement (Lerner et al., 2008; Zhang, 2013). However, it is noteworthy that students exhibited varying levels of PYD at different ages. This study highlighted that students demonstrated better positive qualities in Grade 5 compared to Grade 9 across dimensions such as learning interest, self-efficacy, willpower, time management skills, learning habits, teacher-student relationship, peer relationships, and parent-child relationship. These results align with prior research (Rotgans and Henk, 2011; Tang, 2011; Yan, 2011).

In Grade 9, there was not a significant increase in the positive developmental level of teacher-student relationships. This phenomenon could be attributed to the growing independence of students with age, coupled with the advancement of knowledge and skills. Additionally, the developmental levels of various positive qualities were not uniform. Grades 5 and 9 exhibited that the developmental levels of willpower

and peer relationships were superior to other positive qualities within the same dimension.

Distinct Values of Positive Qualities in Influencing Academic Achievement

It is essential to emphasize that each type of positive quality holds unique value and exerts varying influences on academic achievement. Our findings underscore the significant positive roles played by students' learning interest and learning habits in shaping their academic success—a result corroborated by previous studies (Feng, 2002; Murray and Carol, 2003; Hu, 2013; Yan, 2014). Learning interest, being an internal driving force, effectively motivates individuals to complete actions, with students exhibiting high levels of learning interest achieving excellent academic outcomes (Zhang and Zhang, 1996; Hidi, 2001; He, 2009). According to Bloom, two prerequisites for student learning are cognitive ability, encompassing the acquisition of appropriate knowledge for new subjects, and emotional readiness, which includes learning interest and self-confidence. Previous research has indicated that learning achievement is dependent on 20 percent intelligence factors and 80 percent non-intelligence factors, where learning habits play a crucial role among non-intelligence factors, encompassing faith, will, habits, interests, personality, and more (Fan, 2007).

A plausible explanation for the influence of positive qualities on adolescents' academic achievement lies in the differences in breadth and strength among these qualities. Therefore, while emphasizing the overall impact of positive traits, it is imperative not to overlook the unique contributions of specific positive qualities.

Complex Relationships Between Positive Qualities and Youth Development Issues

Our investigation unveiled a negative correlation between positive qualities and reported problems in youth development programs, such as test anxiety and study burden (Park, 2006b; Li et al., 2010). However, the development trajectories of positive qualities and problem behaviors did not follow a simple negative phase relationship, as supported by previous studies (Phelps, 2009). While test anxiety generally had a negative impact on academic achievement, earlier research suggested that maintaining moderate anxiety required a special mindset, with the intensity needed for competition fostering learning at the highest level (Guo, 2001). The influence of study burden on academic achievement did not differ across grades but exhibited variations across subjects. In Grade 5, study burden negatively impacted students' academic achievement. Conversely, adolescents who perceived their study burden as "heavy" or "a bit heavy" achieved the best outcomes in Grade 9, supporting findings from prior studies on study burden (Tang and Fu, 2007; Liu, 2011). However, the extent of the negative impact of study burden on academic achievement was more pronounced in mathematics than in Chinese, a result inconsistent with previous research (Lerner et al., 2008; Zhang, 2013). Further exploration is needed to understand how the outcomes of negative development influence adolescents' academic achievement.

Methodological Limitations and Suggestions for Future Research

The methodology employed in the current study has its limitations, necessitating further exploration in future research. Firstly, our assessment focused solely on academic ability, confidence, and connection, constituting only a fraction of the Positive Youth Development (PYD) construct in the 5C model. This approach may constrain our ability to comprehensively validate this construct. Including inquiries related to positive cognitive abilities, promoting a healthy lifestyle, personal and social values, and family environment could offer a more nuanced understanding of their influence on adolescents' academic achievement.

Secondly, our study did not delve into potential explanations for the absence of certain influencing factors on adolescents' academic achievement, such as school-running levels, school management abilities, and the integrated quality of teachers. Future research could benefit from exploring these additional dimensions to provide a more comprehensive picture.

Finally, it is crucial to underscore the importance of considering the educational quality divide between urban and rural areas. Future investigations should pay careful attention to this urban-rural gap in education quality to ensure a more inclusive and representative analysis.

Findings

The findings of the present study yield several noteworthy conclusions. Firstly, positive qualities exhibited a positive correlation with favorable developmental outcomes, indicating their predictive capacity for positive academic achievements. Simultaneously, positive qualities demonstrated a negative correlation with negative developmental outcomes, serving as negative predictors for test anxiety and academic

burden.

Secondly, a significant age disparity in positive qualities was observed, with younger students displaying a higher positive developmental level compared to their older counterparts.

Thirdly, the study revealed that each positive quality exerted distinct effects on academic achievement, exhibiting variations across categories and subjects.

Fourthly, it is imperative to recognize that the correlation between negative developmental outcomes and academic achievement is not solely negative; in fact, it may tend to be positive in certain instances.

Consequently, positive qualities play a pivotal role in fostering youth's academic achievement. Irrespective of the existing academic competence of adolescents, researchers should persist in acknowledging the significance of enhancing students' academic competence through the development of relevant educational contexts, encompassing their school, family, and social environment. Educational policymakers and school personnel should devise initiatives aimed at cultivating positive qualities in students, with special attention to the most influential predictors of non-intelligence factors identified in our study, such as learning interest and learning habits. Concurrently, policies and programs should address the outcomes of negative development as an effective strategy for positively influencing some students' academic achievement.

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