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| RESEARCH ARTICLE

Study on the Relationship between Self-Control and CET-4 from the Perspective of Positive Psychology

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| ABSTRACT
In recent years, the perspective of positive psychology has been highlighted in the new trend of second language acquisition research. Self-control is one of the important variables that affect the success of second language acquisition by foreign language learners. Guided by June P. Tangney's theory of self-control, this study explores the relationship between self-control and CET-4 scores of 189 Chinese non-English majors. Its main contents include investigating the level of students' current self-control abilities; whether there are individual differences and gender differences; whether there is an imbalance in the five self-control dimensions; whether there is a correlation between students' self-control abilities and CET-4 test scores. The results show that: 1) Students' self-control abilities are at the middle and slightly higher level, and there are great individual differences; In addition, reliability shows the highest score, but work Ethic is the lowest. 2) Students' self-control, self-discipline, deliberate/non-impulsive action, health habits and work ethic are significantly and positively correlated with their CET-4 scores. 3)There is no significant gender difference between self-control and CET-4. This experiment proves that there is a correlated relationship between self-control and CET-4. Students may better understand their own self-control abilities, which can help them apply useful strategies to improve foreign language learning performance, thereby increasing the effectiveness of second language acquisition.

| KEYWORDS

Positive Psychology, Self-Control, Self-Discipline, CET-4, Second Language Acquisition

| ARTICLE INFORMATION

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1. Introduction

In recent years, the perspective of positive psychology has been highlighted in the new trend of second language acquisition research. However, second language acquisition in China has always attached much importance to the training of language skills, largely ignoring the cognitive factors of language acquisition. Thus, the enlightenment of positive psychology research on second language acquisition in China cannot be ignored (Xu, 2021).

The concept of positive psychology was first proposed by humanistic psychologist Abraham Maslow (1954). Unlike the "focus on disease or defect" research path that psychology has always adopted, positive psychology focuses on the positive qualities that enable human beings to succeed, satisfy, and realize themselves. Seligman & Csikszentmihalyi (2000) inherited and developed this kind of view, stating that the goal of positive psychology is to achieve a positive turn in research and practice in the field of psychology and proposing the three cores of positive psychology: 1) positive experiences at the subjective level, 2) positive individual traits at the individual level, and 3) positive institutions at the collective level. Since then, positive psychology has become an important branch of psychology, and positive traits conducive to individual or collective success and happiness have begun to be valued.

Self-control is one of the variables that affect the success or failure of foreign language learners. In 2004, Tangney, Baumeister & Boone (2004) incorporated a new scale to measure individual differences in self-control into two large-scale studies on a wide range of behaviors, and the new scale produced by them has good internal consistency and retest reliability. The content of the scale test consists of five dimensions: Self-Discipline, Deliberate or Non-Impulsive action, Healthy Habits, Work Ethic and Reliability. The results show that higher scores on self-control correlate with a higher grade point average, better adjustment (fewer reports of psychopathology, higher self-esteem), less binge eating and alcohol abuse, better relationships and interpersonal skills, secure attachment, and more optimal emotional responses.

Guided by June P. Tangney's theory of self-control, this study is to explore the relationships between self-control and CET-4 scores of Chinese non-English majors. From a practical point of view, on the one hand, it is beneficial for foreign language teachers to diagnose their students' self-control abilities more accurately so as to formulate coping teaching strategies. On the other hand, it helps students understand their self-control abilities and apply self-control strategies to improve their foreign language learning performances, thus improving the effectiveness of second language acquisition.

2. Literature review

The process of an individual's self-control is one manner of acting or thinking instead of another, which is achieved by suppressing or overcoming his or her own desires or needs to change inherent or customary behaviors and ways of thinking. The healthiest and happiest time one can feel is when the self and the environment are perfectly matched, but it is difficult for individuals and environments to match completely in everyday life, but the degree of matching can be maximized by adjusting themselves. Therefore, self-control is one of the strongest and most beneficial abilities of the human mind. However, there are huge differences between individuals in their abilities to exercise self-control. High self-control individuals have stronger adaptability, higher relationship satisfaction and life satisfaction, healthier physical and psychological health, better performance in study and work, and therefore a higher sense of subjective well-being.

Previous studies explore the relationship between individual self-control abilities and different types of mental states or behaviors in various fields through multiple approaches, such as surveys, interviews or experimental tasks. The topics of these studies are diverse.

2.1 Self-control and its theoretical model

Brownstein (2018) used traditional virtue theory terms to understand self-control and studied insufficient and excessive self-control. As understood in the positive psychology literature, self-control was more advantageous for some segments of the population, depending on the racial and socioeconomic status of different populations.

Werner & Ford (2023) drew on parallel fields such as emotion regulation, health, and other self-regulation theories to propose a comprehensive framework that described self-control as a dynamic, multi-stage process that unfolds over time. This framework proposed three stages of regulation: identifying the need for self-control, choosing strategies to regulate temptation, and implementing selected strategies. These regulatory phases were then flexibly monitored over time. The framework improved our understanding of how self-control unfolded in everyday life by bridging theories and disciplines.

Wu, Ng-Knight & Tenenbaum (2023) used the TESSERA personality development model to study the role of homework emotions, to test whether weekly homework effort can predict self-control and whether these emotions can modulate the impact of homework effort on self-control based on the predictions of the TESSERA model. The results showed that homework effort was associated with changes in children's self-control ability. Consistent with the TESSERA personality development model, positive state expression (e.g., effort) made during academic effort predicted higher self-control in the following week. This research expanded the theoretical model of the practical applications of self-control.

Jiang, Lin, & Hu (2023) developed a chain mediation model based on the limited resource model of self-control in order to determine the role that social anxiety and self-control play in the link between parental phubbing and academic burnout in teenagers. The results showed that parental phubbing, social anxiety, and self-control were all significant predictors of academic burnout among adolescents; and that parental phubbing might indirectly influence academic burnout among adolescents via three pathways: the independent mediating effect of social anxiety and self-control, and the chain mediating effect on both.

Lucifora's (2021) study of moral reasoning questioned self-control, including the three dimensions of impulsivity, compulsion, and inhibitory control, and the results showed that all three dimensions of self-control involved in the study were related to moral reasoning, depending on the type of assessment and the moral context provided.

2.2 Self-control and negative psychology

Most studies have focused on negative psychological aspects like anxiety, exhaustion, and other emotional issues, as contrasted with positive psychology (Ran, 2016; Zhao & Zhang, 2018; Jin et al., 2019; Hee, 2021; Bakac & Kehr, 2023).

The research conducted by Ran (2016) analyzed the impact of psychological interventions on cyberaddiction quantitatively and found the intervention-regulating factors relevant to school-aged children. There were 37 experiments chosen, including 11 different types of therapy. Estimates of the effect of psychological therapies on decreasing cyberaddiction, boosting self-control, and promising self-esteem.

By using the college students' Learning Self-Control Strength Scale, Learning Fatigue Measurement Scale, and School Adaptation Scale, Zhao & Zhang (2018) investigated the connection between these factors and 400 female college student's ability to study and adapt to college life. According to the results of the survey, there is a positive correlation between school adaptation and academic success, a negative correlation between self-control and boredom, and a partial mediating role for boredom in the relationship between academic success and self-control.

Jin et al. (2019) used the Anxiety Sensitivity Index (ASI), the Self-Control Scale (SCS), and the Network Malpractice Behavior of College Students (NABSCS) to explore the relationship between college student anxiety sensitivity, cyber malpractices, and self-control. Jin concluded that students with low levels of self-control could amplify the impact of anxiety sensitivity on online malpractice behavior.

Hee (2021) studied college nursing students' emotional fluctuations in the face of stress by using non-equivalent control groups and non-synchronous designs for semi-experimental studies and proved that anger self-control programs have positive effects on caregiving characteristics such as anger, anger expressions, gratitude tendencies, and depression. Hence, this program can be effectively applied to extra-curricular anger management projects for nursing students.

Bakac & Kehr (2023) have examined the causes and consequences of fear in the field of motivational research. By exploring the connections between fear motivations, intrusive thoughts, self-control mechanisms, and positive affect, this study observed that intrusive thoughts were favorably connected to fear motivations and negatively related to self-control techniques. Furthermore, self-regulation techniques were substantially and positively related to an upbeat disposition.

2.3 Self-control and positive psychology

2.3.1 Research of positive subjective experience and positive personality traits

Positive emotions are a major aspect of positive psychology research, which advocates the study of individuals' positive experiences of the past, present, and future. The main focus of the research is positive experiences such as satisfaction, happiness, joy, optimism, and hope. Positive personality traits are mainly stimulated and strengthened by the various actual and potential abilities of individuals. A positive personality helps individuals adopt more effective coping strategies, including self-determination, optimism, mature defense mechanisms, wisdom, etc. Positive psychologists also believe that one of the best ways to develop positive personality traits is to enhance positive emotional experiences in individuals.

In recent years, there has been a lot of research paying attention to the trait self-control under the theory of positive personality traits (Baumann, Danilov & Stavrova,2023; Forestier et al., 2023; Zhang et al., 2023).

Forestier et al. (2023) investigated whether trait self-control and self-control resources moderate the correlations between executive functions and physical activity, sedentary behavior, and healthy or unhealthy diets. The survey found that physical exercise was favorably predicted by self-control resources, sedentary behavior was negatively predicted by self-control resources, and a healthy diet was positively predicted by self-control resources. In addition, both a healthy diet and an unhealthy diet were positively predicted by the attribute of self-control. The survey also demonstrated that switching strongly predicted self-control resources and highlighted three fully mediated relationships between this executive function and physical activity, sedentary behavior, and healthy eating.

Based on self-regulation theory, a moderated mediation model was constructed by Zhang et al. (2023) to investigate the mediating role of moral disengagement and the moderating role of self-control. 628 Chinese youths were recruited to take part in an anonymous survey. Results revealed that youths with high future orientation judged their own moral transgressions more harshly and that moral disengagement partially mediated the relationship between the two. These findings not only enriched the research about how future orientation affects youths' judgment of their own immoral behaviors but also revealed the underlying

mechanisms between future orientation and moral judgment, which provided practical guidance for implementing measures that effectively enhance youths' moral character and cultivate their ability to think positively about the future.

On the other hand, there is also a wealth of research on self-efficacy (Zhao & Zhang, 2018; Feng. 2019; Zhang et al., 2021; Yu et al., 2023; Deniz et al., 2023).

Research conducted by Zhao & Zhang (2018) using a structural equation model revealed a strong positive relationship between emotional intelligence, learning motivation, learning strategy, self-efficiency, and learning self-control, while further analysis revealed that a student's sense of performance, motivation for learning, and learning strategy all contributed to her overall level of self-control in the classroom.

Feng (2019) studied the role of school self-effectiveness in the intermediate role of academic emotions and learning self-control in middle school students. Correlation analysis confirmed the existence of two or more significant connections between the various dimensions of school emotions, academic self-efficacy, and learning self-control, supporting the findings of previous studies. Similarly, Zhang et al. (2021) also validated the findings of Feng Shui (2019) on the mediation of self-efficiency and further supplemented its conclusions.

Yu et al. (2023) investigated the connection between perceived scarcity, self-efficacy, self-control, and delayed gratification; and the role that self-efficacy and self-control play as mediators between perceived scarcity and delayed gratification. The findings revealed a negative relationship between perceived scarcity and self-efficacy, self-control, and delayed gratification, with self-efficacy and self-control serving as partial parallel mediators between perceived scarcity and delayed gratification. Results also showed that perceived scarcity has a detrimental effect on self-efficacy and self-control, which in turn reduces the ability to defer pleasure. This finding lent credence to the need for more study into the psychological and behavioral effects of intervening on perceived scarcity and explains, at least in part, why this phenomenon occurs from the perspectives of motivation and cognition.

Cross-sectional studies have merely looked at the connections between self-control, hope, and psychological adjustment; however, the research from Deniz et al. (2023) made up for the hole by looking at all three factors together over time. Hope was shown to have a pivotal role as a moderator in the observed long-term relationship between self-control and psychological adjustment. This prospective research demonstrates that the capacity for self-control is associated with higher levels of hope and that hope is an important predictor of one's degree of psychological adjustment.

2.3.2 Research of positive social environment

Children are most likely to grow up healthy and achieve self-actualization when their surroundings, parents, teachers, classmates, and friends provide optimal support and compassion (Maslow, 1954). Conversely, when parents and authorities do not consider their children's unique perspectives or only give them information about being loved if they meet certain criteria, these children are prone to unhealthy emotional and behavioral patterns.

Research on the influence of age at entry into childcare on both characteristics is still debatable, despite the fact that self-control and collaboration are associated with preschoolers. Zhu et al. (2023) used data from 316 Japanese preschoolers to investigate the influence of age at entry into childcare on the bidirectional links between self-control and collaboration. Both inter- and intrapersonal levels of the analysis showed a favorable correlation between the two concepts.

Over the last decade, researchers have paid increasing attention to a new phenomenon among adolescents: the Fear of Missing Out (FoMO). Jiao & Cui (2023) studied how children's sense of self-control and self-efficacy are related to their parents' indulgent parenting style by looking at the scope of social media and parental influence to investigate the prevalence of FoMO among teenagers and the detrimental effects it has on their development. Results from structural equation modeling using a sample of 268 American teenagers showed that indulgent parenting was inversely connected to self-control and self-efficacy, which in turn were inversely related to fear of missing out (FoMO). The findings indicated that teenagers' social skills may be negatively impacted by indulgent parenting due to difficulties in cognitive ability.

The research of Yang et al. (2023) investigated the moderating effects of grandparental involvement in parenting on children's self-control. The survey's findings revealed that co-parenting between a mother and a grandparent was associated with higher levels of maternal authoritative parenting, grandparental authoritative parenting, and children's self-control, and lower levels of maternal authoritarian parenting and grandparental authoritarian parenting. In particular, when parents and grandparents worked together, children showed more self-control when their grandparents used a more permissive style of parenting. These results

have important implications for practice and policy, as they shed light on the relationship between parent-grandparent co-parenting and children's self-control in China.

According to Lu's (2020) study that followed a prescribed research model comparing the traditional and reverse classrooms, the former was found to be ineffective for teaching English in primary schools, while the latter's proposed amendment to reverse the classroom teaching pattern was found to effectively improve the bad English learning psychology of secondary school students.

Jiao & Cao (2021) researched what factors had an impact on high school students' ability to self-regulate their learning and found that boys performed better than girls in this area. Students at rural schools, as opposed to those in urban public schools, are more open to acquiring self-control, and both internal and external variables have a greater impact on first-year students' self-control.

3. Methodology

3.1 Research questions

This paper mainly explores the relationship between the self-control ability of non-English majors in China and CET-4 scores from the perspective of positive psychology. The specific research questions are as follows: First, what is the current situation with the self-control ability of non-English majors in one Chinese provincial university? Second, what are the relationships between self-control and CET-4 regarding non-English major students' English proficiency and gender?

3.2 Research Participants

In this study, except for freshmen, 242 non-English majors from Shandong Agricultural University were selected as participants and 189 valid samples were finally left after excluding unqualified data. Participants come from 21 different majors and contain three grades from freshman to senior, including 98 males and 91 females (average age 21.534).

3.3 Research instruments

The research instruments are the self-control ability questionnaire and CET-4 test score. The former consists of two parts: personal information and the Chinese version of the Self-Control Scale. Personal information includes students' gender, age, student identity number and major. The Self-Control Scale adopts the format of a six-point Likert scale, ranging from strongly disagreed to strongly agreed. The theoretical range of scoring is between 1 and 6. The questionnaire was designed by Tangney, Baumeister & Boone (2004). There are 36 questions, including 5 sub-scales: Self-Discipline (a total of 11 items, such as 1, 4, 5, 9, 10, 11, 13, 14, 16, and 17) refers to the overall self-restraint and is close to the macro self-control; Deliberate/Non-Impulsive Action (10 items, including 4, 6, 11, 12, 19, 20, 31, 32, 33, and 34) involves impulsive behaviors which would contribute to success at impulse regulation; Healthy Habits (7 items, including 2, 3, 8, 15, 26, 27, and 35) are expressed as good living habits and rest; Work Ethic (5 items, including 23, 25, 28, 29, and 30) is related to task performance, such as in school or work; and Reliability (5 items, including 7, 18, 21, 24, and 36) includes two key personality features, namely, conscientiousness and perfectionism, and they are theoretically related to the propensity for self-control. According to Tangney et al. (2004), the reliability and validity of the scale are high, and its internal consistency reliability coefficient is 0.89.

The scores of the CET-4 will use the scores reported by the National College English CET-4 and CET-6 committees to the academic affairs office of the university where the examinee is located, and the examinee will fill in the questionnaire after inquiring. The scores of CET-4 are based on a scoring system with a full score of 710 points. This study only employed the total score. Among the 189 participants in this study, the highest score of CET-4 was 632, and the lowest score was 327.

3.4 Data collection and analysis

In this study, data were collected in the form of an online questionnaire application, and the subjects voluntarily completed the questionnaire according to the instructions in the questionnaire; after eliminating the questionnaires with incomplete items, 189 valid questionnaires were obtained. The analysis software is SPSS 19.0. The scores of each subject are input into the computer one by one according to the original order of the questionnaire questions, and 24 questions with negative meanings are scored reversely, and then the average scores of each subject on each sub-scale are calculated. Descriptive statistics, Pearson correlation analysis and independent samples T-test were used in the analysis.

4. Results and Discussion

4.1 The current status of students' self-control

Table 3.1 lists the mean, standard deviation and range of the five sub-scales of the self-control scale. As shown in Table 3.1, students' self-control abilities (Mean 3.653) are slightly higher than the median, but the standard deviation (0.474) reveals that the individual difference is relatively small. In addition, Reliability (Mean 3.838) shows the highest score, but Work Ethic (Mean 3.506) is the lowest.

Table 3.1 Descriptive statistics of Self-Control Scale and its five dimensions

Variable	Mean	Standard Deviation	Range
Self-Control	3.653	0.474	117
Self-Discipline	3.557	0.628	43
Deliberate/Non-impulsive action	3.649	0.675	43
Healthy Habits	3.734	0.735	30
Work Ethic	3.506	0.79	22
Reliability	3.838	0.909	23

As displayed by Table 3.2, the mean score of the participants on thirty six items of the Self-Control Scale was 3.652. Among them, the mean value of sixteen items exceeded the mean score. First of all, the participants have high self-control ability on the items related to the reliability dimension, and all the scores of the five items under this sub-scale are higher than the mean value, followed by items 21, 36, 24, 18 and 7. This shows that many students have a high self-evaluation of their self-reliability in self-control, and think that they will not be easily discouraged, will be punctual, can keep secrets, and are reliable people. Followed by the dimension of health habits, the scores of four out of seven items are higher than the mean value, followed by such items as 35, 26, 27 and 3. This shows that many students adhere to healthy living habits, engage in healthy activities, eat healthy food, and refuse to drink or abuse drugs. The third item is the dimension of deliberate or non-impulsive action, that is, impulse control. Four out of the ten items scored higher than the mean score, followed by items 12, 34, 20 and 19. This shows that students think that they can control their impulsive emotions and will not be impulsive or be carried away by feelings easily. They will not do things on impulse and will not interrupt others frequently. The fourth item is the dimension of work ethic, that is, their performance at work and study. Among the five questions, only item 30 is higher than the mean score, which shows that most students are not confident in their work performance and have a low evaluation of self-control. They think it is difficult to concentrate on work, and they believe that they will be in a better situation if they stop and think carefully before taking action, and some enjoyment will sometimes prevent them from completing their work. The last item is self-discipline. Only two out of the eleven items scored higher than the mean score, namely, item 14 and item 13. This shows that most students have a low evaluation of their overall self-control. They think that they are not good at resisting temptation and find it difficult to say no; they often change their minds, sometimes indulge themselves, sometimes lose self-control, and hope that they can be more self-disciplined.

Table 3.2 Descriptive statistics of each item of the Self-Control Scale

Variable	minimum	Maximum	Mean	S D
21. I don't keep secrets very well.	1.000	6.000	4.101	1.546
35. I sometimes drink or use drugs to excess.	1.000	6.000	4.085	1.799
14. I spend too much money.	1.000	6.000	4.026	1.531
12. People would describe me as impulsive.	1.000	6.000	3.984	1.475
26. I engage in healthy practices.	1.000	6.000	3.968	1.591
13. I refuse things that are bad for me.	1.000	6.000	3.899	1.546
34. I often interrupt people.	1.000	6.000	3.878	1.588
35. I sometimes drink or use drugs to excess.	1.000	6.000	3.810	1.613
24. I'm not easily discouraged.	1.000	6.000	3.804	1.540
18. I am reliable.	1.000	6.000	3.804	1.547
19. I get carried away by my feelings.	1.000	6.000	3.799	1.598
30. I am able to work effectively toward long-term goals.	1.000	6.000	3.762	1.592
27. I eat healthy foods.	1.000	6.000	3.741	1.509
20. I do many things on the spur of the moment.	1.000	6.000	3.741	1.572
1. I say inappropriate things.	1.000	6.000	3.720	1.426
7. People can count on me to keep on schedule.	1.000	6.000	3.672	1.494

Table 3.2 Descriptive statistics of each item of the Self-Control Scale

Variable	minimum	Maximum	Mean	S D
11. I blurt out whatever is on my mind.	1.000	6.000	3.651	1.556
2. I never allow myself to lose control.	1.000	6.000	3.640	1.570
33. I lose my temper too easily.	1.000	6.000	3.619	1.517
28. Pleasure and fun sometimes keep me from getting work done	1.000	6.000	3.561	1.558
31. Sometimes I can't stop myself from doing something, even if I know it is wrong.	1.000	6.000	3.561	1.589
14. I spend too much money.	1.000	6.000	3.556	1.534
8. Getting up in the morning is hard for me.	1.000	6.000	3.556	1.671
32. I often act without thinking through all the alternatives.	1.000	6.000	3.545	1.555
9. I have trouble saying no.	1.000	6.000	3.534	1.511
1. I am good at resisting temptation.	1.000	6.000	3.524	1.559
22. People would say that I have iron self-discipline.	1.000	6.000	3.519	1.652
15. I keep everything neat.	1.000	6.000	3.513	1.610
2. I have a hard time breaking bad habits.	1.000	6.000	3.513	1.643
10. I change my mind fairly often.	1.000	6.000	3.492	1.583
3. I do certain things that are bad for me if they are fun.	1.000	6.000	3.376	1.488
29. I have trouble concentrating.	1.000	6.000	3.370	1.591
23. I have worked or studied all night at the last minute.	1.000	6.000	3.360	1.428
Average	1.000	6.000	3.652	1.799
Total	1.000	6.000	131.483	48.237

In the statistical analysis of this section, students' self-control abilities are at the middle and slightly higher level, and Reliability shows the highest score. Similarly, Roy F. Baumeister (2004) also tested the relationship between self-control and Reliability. In his experiment, reliability contained two key personality features (conscientiousness and perfectionism) theoretically related to the propensity for self-control. In the dimension division of the SCS questionnaire used in this article, the topic keywords under the Reliability dimension also contain 'keep on schedule' and 'keep secrets', which are related to the sense of responsibility. The capacity for self-control is obviously an essential component of behaving in a conscientious manner, such as completing assignments, fulfilling commitments, and otherwise taking care of business. All of these would require the ability to control and direct behavior strategically.

But there are also some unexpected results. In the ranking of the proportion of scores on the five sub-scales of self-control that exceed the mean scores, the first two dimensions are reliability and health habits, with a relatively higher mean score, and then the deliberate or non-impulsive action dimension. In contrast, the work ethic and self-discipline dimensions, which are more directly related to CET-4 scores and are more conducive to intuitive understanding, have relatively lower scores. This shows that compared with personality characteristics and living habits, students have lower self-assessments in the areas of working and learning performance, impulse control and overall self-discipline, or in other words, they are not confident enough in their self-control abilities in these dimensions.

4.2 Correlation between self-control and CET-4

In order to understand the relationship between subjects' self-control ability and CET-4, we performed a Pearson correlation analysis on the data, as shown in Table 3.3. The results indicate that there is a significant positive correlation between CET-4 scores and total self-control ability ($p = 0.000$). And in the five sub-dimensions, CET-4 is significantly correlated with four of them: Self-Discipline ($p = 0.000$), Deliberate/Non-impulsive action ($p = 0.000$), Healthy Habits ($p = 0.012$), and Work Ethic ($p = 0.000$). However, there is no significant correlation between CET-4 and Reliability ($p = 0.951$). To sum up, except for reliability, overall self-control ability and all the other dimensions have significant positive correlations with CET-4 scores.

Table 3.3 Correlation analysis between self-control and CET-4

Variable	Calculation Method	CET-4
Self-Control	Correlation Coefficient	0.340 **
	P value	0.000
Self-Discipline	Correlation Coefficient	0.276 **
	P value	0.000
Deliberate/Non-impulsive action	Correlation Coefficient	0.315 **
	P value	0.000
Healthy Habits	Correlation Coefficient	0.183 *
	P value	0.012
Work Ethic	Correlation Coefficient	0.299 **
	P value	0.000
Reliability	Correlation Coefficient	0.004
	P value	0.951

Note: * $p < 0.05$; * * $p < 0.01$

According to these results, students' self-control ability is significantly and positively correlated with their CET-4 scores. It is consistent with the results obtained by Tagney (2004) in his Self-Control Scale testing survey. According to Tagney's SCS experiment, which involved 351 undergraduate students, there was a significant correlation between the participant's performance and the Work Ethic dimension in the self-control sub-scales. In his definition, Work Ethic refers to task performance, for example, in school or at work. Similarly, in this paper, the relationship between student self-control ability and CET-4 scores involves task execution. Our participants are all college students, so one of the main or typical measures of overall second language acquisition ability is the average score of CET-4. In the long run, people with high self-control achieve better results because they finish tasks on time, prevent leisure activities from interfering with work, make effective use of study time, choose suitable courses, and prevent emotional interference from affecting performance. Feldman, Martinez-Pons, and Shaham (1995) found that children with higher self-regulation (as assessed by the Student Regulated Learning Scale; Zimmerman & Martinez-Pons, 1988) received better grades in a computer course.

Previous studies lent support to the prediction that high self-control would predict better academic performance before we conducted an investigation and data analysis. These findings have provided some evidence to prove that self-control is beneficial to their school performance, which is the same as the investigation and analysis results of this paper.

4.3 Gender differences between self-control and CET-4

In order to find out the gender differences between self-control ability and CET-4, we conducted independent samples T-test. As shown in Table 3.4, the t values of total scale and the four sub-scales are all negative numbers, and it shows that the mean scores of females are less than the mean scores of males in five dimensions: Self-Control (t = -0.384), Self-Discipline (t = -0.821), Deliberate/Non-impulsive action (t = -0.706), Healthy Habits (t = -0.127), Work Ethic (t = -0.668), while Reliability (t = 1.499) shows the opposite result, which only means a slight difference in their mean scores. But there is no statistically significant difference in self-control ability in terms of gender (p > 0.05).

Table 3.4 Independent Sample T-Test for Total Scale and Sub-scales

Variable	Gender (Mean Value±Standard Deviation)		T Value	P Value
	Female(n=91)	Male(n=98)		
Self-Control	3.63±0.47	3.66±0.48	- 0.384	0.701

Table 3.4 Independent Sample T-Test for Total Scale and Sub-scales

Variable	Gender (Mean Value±Standard Deviation)		T Value	P Value
	Female(n=91)	Male(n=98)		
Self-Discipline	3.52±0.65	3.59±0.61	- 0.821	0.412
Deliberate/Non-impulsive action	3.61±0.67	3.68±0.68	- 0.706	0.481
Healthy Habits	3.73±0.70	3.74±0.77	- 0.127	0.899
Work Ethic	3.47±0.87	3.54±0.71	- 0.668	0.505
Reliability	3.94±0.83	3.74±0.97	1.499	0.136

Note: * p < 0. 05 ** p < 0. 01

Since the gender difference in self-control ability under the total scale and each sub-scale is not statistically significant, we, therefore, conducted an independent samples T test for 36 specific items to analyze the differences in a more detailed way. As shown in Table 3.5, among the 36 items, the standard values and mean values of male and female college students show significant differences in four items.

As shown in Table 3.5, in terms of gender, the specific analysis shows that items 5, 19, 22, and 33 are significantly different. And the specific contrast difference can be explained as follows: (1) Item 5 (t = -2.564, p = 0.011) shows that the average value of females (3.34) is significantly lower than that of males (3.92). This indicates that males have a better ability to control their temper than females, and females are sometimes more likely to lose control of themselves. (2) Item 19 (t = 2.208, p = 0.028) shows that the average value of females (4.00) is obviously higher than that of males (3.50). This demonstrates that males are more likely to get carried away by feelings and are inferior to females in rationality and sensibility. In contrast, females will be more rational and not easily get carried away by their feelings. (3) Item 22 (t = -2.029, p = 0.044) shows that the average value of females (3.14) is obviously lower than that of males (3.56). This suggests that males have a higher self-evaluation of whether they have steely willpower and think they have strong willpower, while females have lower confidence in their own willpower. (4) Item 33 (t = -2.164, p = 0.032) shows that the average value of females (3.37) is obviously lower than that of males (3.85). This reveals that compared with females, males may lose their temper more easily or have lower self-evaluation on temper control, while females have better self-control in this aspect.

Table 3.5 Independent Samples T-Test for Each Item of Self-control Scale

Variable	Gender (Mean Value±Standard Deviation)		T Value	P Value
	Female(*n*=91)	Male(*n*=98)		
1. I am good at resisting temptation.	3.53±1.58	3.52±1.55	0.031	0.975
2. I have a hard time breaking bad habits.	3.42±1.72	3.60±1.57	-0.771	0.442
3. I am lazy.	3.68±1.38	3.76±1.47	-0.355	0.723
4. I say inappropriate things.	3.27±1.61	3.40±1.53	-0.540	0.590
5. I never allow myself to lose control.	3.34±1.54	3.92±1.56	-2.564	0.011*
6. I do certain things that are bad for me if they are fun.	3.16±1.42	3.57±1.53	-1.890	0.060
4. People can count on me to keep on schedule.	3.84±1.41	3.52±1.56	1.451	0.148
8. Getting up in the morning is hard for me.	3.45±1.66	3.65±1.69	-0.832	0.406
9. I have trouble saying no.	3.68±1.70	3.32±1.45	1.581	0.116
10. I change my mind fairly often.	3.53±1.65	3.54±1.38	-0.060	0.952
11. I blurt out whatever is on my mind.	3.77±1.58	3.54±1.53	1.009	0.314
12. People would describe me as impulsive.	3.93±1.47	4.03±1.48	-0.449	0.654
13. I refuse things that are bad for me.	4.08±1.56	3.73±1.52	1.526	0.129
14. I spend too much money.	3.98±1.45	4.07±1.61	-0.418	0.676

Table 3.5 Independent Samples T-Test for Each Item of Self-control Scale

Variable	Gender (Mean Value±Standard Deviation)		T Value	P Value
	Female(*n*=91)	Male(*n*=98)		
15. I keep everything neat.	3.41±1.59	3.69±1.47	-1.288	0.199
16. I am self-indulgent at times.	3.41±1.63	3.61±1.59	-0.877	0.382
17. I wish I had more self-discipline.	2.98±1.74	3.32±1.73	-1.337	0.183
18. I am reliable.	4.02±1.61	3.60±1.47	1.877	0.062
19. I get carried away by my feelings.	4.00±1.57	3.50±1.54	2.208	0.028*
20. I do many things on the spur of the moment.	3.89±1.61	3.71±1.59	0.755	0.451
21. I don't keep secrets very well.	4.16±1.58	4.04±1.52	0.550	0.583
22. People would say that I have iron self-discipline.	3.14±1.49	3.56±1.34	-2.029	0.044*
23. I have worked or studied all night at the last minute.	3.52±1.76	3.52±1.55	-0.016	0.987
24. I'm not easily discouraged.	3.77±1.47	3.84±1.61	-0.300	0.764
25. I'd be better off if I stopped to think before acting.	3.18±1.56	3.45±1.53	-1.213	0.227
26. I engage in healthy practices.	4.14±1.51	3.81±1.65	1.458	0.146
27. I eat healthy foods.	3.79±1.41	3.69±1.60	0.442	0.659
28. Pleasure and fun sometimes keep me from getting work done.	3.30±1.62	3.44±1.57	-0.612	0.541
29. I have trouble concentrating.	3.58±1.55	3.54±1.57	0.183	0.855
30. I am able to work effectively toward long-term goals.	3.76±1.49	3.77±1.69	-0.030	0.976
31. Sometimes, I can't stop myself from doing something, even if I know it is wrong.	3.44±1.56	3.64±1.55	-0.897	0.371
32. I often act without thinking through all the alternatives.	3.38±1.62	3.72±1.55	-1.474	0.142
33. I lose my temper too easily.	3.37±1.55	3.85±1.45	-2.164	0.032*
34. I often interrupt people.	3.90±1.63	3.86±1.56	0.190	0.850
35. I sometimes drink or use drugs to excess.	4.20±1.85	3.98±1.75	0.832	0.406
36. I am always on time.	3.91±1.55	3.71±1.67	0.842	0.401

Note: * $p<0.05$ ** $p<0.01$

To sum up, firstly, as shown in this section, students' self-control abilities have no statistically significant difference in terms of gender. This discovery is slightly different from the existing foreign studies. Flynn (1985) found that improvements in self-control were correlated to improvements in school achievements among 4-year-old African American migrant boys, although not girls. Therefore, this result needs to be further improved.

Secondly, this research assumes that there should be a gender difference between males and females. However, in the statistical analysis of this section, the two variables were analyzed by the independent sample t test, and its results showed that although the mean scores of females on the total scale and the four sub-scales were generally smaller than the mean scores of males, the difference between these two was relatively small, so the self-control ability and CET-4 scores had no statistically significant differences. In the subsequent statistical analysis of 36 specific questions of the questionnaire, the results also showed that only 4 questions had statistically significant differences. Among them, the keywords of the three questions were temper or feeling, and the remaining one was self-discipline; that is, both sets of keywords belong to the deliberate/non-impulsive action or self-discipline dimension and do not involve the work ethic dimension. However, as explained in the article, according to Tagney's SCS questionnaire, experiments show that the work ethic dimension has a greater relationship with students' academic performance. This is not reflected in this study and could be due to unexpected results.

5. Conclusion

5.1 Major findings

This paper mainly studies the self-control ability of non-English majors at Shandong Agricultural University and explores the relationship between self-control ability and CET-4 scores from the perspective of positive psychology. According to the findings in Section 3.1, students' self-control abilities at the current status are at the middle and slightly higher level, and there are great individual differences; in addition, Reliability shows the highest score, but Work Ethic is the lowest.

Then we analyze and discuss two major research questions. First, what are the current situations of the self-control abilities of non-English majors in one Chinese provincial university? Second, what are the relationships between self-control and CET-4 regarding non-English major students' English proficiency and gender?

According to the findings of the first research question, there is a significant positive correlation between CET-4 and total self-control ability according to Pearson correlation analysis in Section 3.2. In addition, the overall self-control ability and the other four dimensions have significant positive correlations with CET-4 scores, except for the reliability dimension.

For the findings of the second research question, it can be obtained from the independent sample T test for the total scale and the sub-scales in Section 3.3 that there is no statistically significant difference in self-control ability in terms of gender. Although there are differences in the mean scores of males and females, i.e., the mean scores of females are mostly smaller than the mean scores of males; the difference is relatively small and not statistically significant. Therefore, the gender difference between self-control ability and CET-4 scores can be ignored in general.

5.2 Research limitations and future recommendations

There are some limitations in this study. First of all, its research design is inadequate. The participants were only selected from 189 college students. On the one hand, the sample size is relatively small; on the other hand, participants are selected from only one university. Therefore, more participants should be selected for a supplementary study, such as by increasing the total number of participants or expanding the coverage of sample schools and majors, to improve the reliability and validity of the research results.

Secondly, its method choice is one-sided. This research is quantitative research and does not include qualitative research, such as supplementary offline interviews and case studies, so it lacks more in-depth excavation and analysis of how self-control affects second language acquisition. In the follow-up supplementary research, a combination of qualitative and quantitative methods should be adopted to strengthen the research.

In summary, this study combines self-control ability with second language acquisition research from the perspective of positive psychology. But more research methods should be adopted to conduct intensive research on the differences between self-control and CET-4 scores.

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