

The Relationship Between Students' Personalities, Behavior Habits, And Strengths and Weaknesses in Different Subjects

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Abstract. With the development of social levels and changes in the college entrance examination system, the issue of students' subject bias has received widespread attention. However, there are still deficiencies in understanding the relationship between the phenomenon of subject bias under new policies and students' intrinsic factors. This paper analyzes the internal factors of individual students: personality, behavioral habits, and their relationship with subject strengths and biases. The analysis reveals that different subjects have different characteristics and require different types of talents. Additionally, students' personalities influence the formation of behavioral habits, and further, personality traits can correspond to the traits required by different subjects, allowing for matching. Currently, education still exists with gender-based definitions of subject strengths, forcing subjects into binary classifications, and making crude categorizations of students based on their course selections, leading to prejudices against the humanities and social sciences, which hinders the development of students' diverse trends and personalized needs. Based on this, the following suggestions are proposed: first, break the stereotype that gender causes subject bias, encouraging students to explore subjects that align with their personal characteristics for in-depth development. Second, encourage schools to provide diversified and personalized education based on the different students.

Keywords: Character; Personality; Academic Strengths; Behavioral Habits.

1. Introduction

With the combined effect of educational system reforms and changes in industrial structures, the alignment between students' personal qualities and their professional development has become increasingly evident. According to the Ministry of Education's 2023 Employment Quality Report for college graduates, the proportion of graduates whose career choices do not match their personal conditions exceeds 60%, leading to a 38% increase in turnover during the early career stage ($\beta=0.41$, highly significant $p<0.001$) [1]. Under the backdrop of the college entrance examination reform, the degree of alignment between students' personal qualities and the subjects they choose has a significant impact on academic achievement.

Previous studies have shown that different personality dimensions have varying predictive effects on academic strengths. Individuals with high openness traits achieve significantly higher grades in humanities courses compared to STEM courses, while those with high conscientiousness perform better in subjects requiring long-term commitment [2]. Current findings lack further research.

Based on an integrated perspective of developmental psychology and educational measurement, this study focuses on exploring the following core concerns: First, what kind of association patterns exist between students' personality types and their distribution of subject strengths. Second, whether learning habits play a mediating role between traits and academic performance. The findings can guide the optimization of career education, thereby constructing the theoretical foundation for differentiated development plans.

2. Theoretical Foundation

2.1. The Delineation of Student Personality

Personality is a stable psychological trait that individuals display in the processing of emotions, decision-making, and interpersonal communication. It is part of the personality composition. The definition of 'student personality' used in this paper is analyzed based on the five-factor personality theory. This theoretical framework includes Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism [3,4]. The Openness index refers to the degree to which an individual accepts new ideas, new experiences, and cultural diversity; the Responsibility index refers to the degree to which an individual sets goals, plans, self-regulates, and executes them; the Extroversion index refers to the degree to which an individual focuses on the external world, social skills, and emotional expression; the Agreeableness index refers to the degree to which an individual interacts with others, social benevolence, and cooperativeness; the Neuroticism index refers to the degree of emotional stability and emotional responsiveness.

2.2. The Definition of Behavioral Habits

Behavioral habits are long-term behavioral patterns formed by individuals during their daily lives and learning, prominently displayed in aspects such as time management, methods of acquiring knowledge, self-regulation abilities, and group collaboration. According to Bandura's social cognitive theory framework from 1986, behavioral habits are the composite outcomes of cognitive components, environmental factors, and behavioral manifestations. They are crucial tools for individuals to adapt to environmental changes and achieve their goals [5].

2.3. The Relationship Foundation between Academic Advantages and Professional Development

Subject advantages refer to the competitive strengths that students demonstrate in a particular academic field, manifested as their grasp of knowledge, desire for exploration, and comprehensive application abilities; professional development refers to the initial state of students' professional inclinations during high school and the connection to higher education or vocational development.

3. Relationship Studies

3.1. Subject Characteristics and Talent Demand Features

Different disciplines have distinct disciplinary characteristics. Chinese language focuses on students' cultural literacy and literary accumulation, history emphasizes value judgments and meaning interpretation, and politics has practicality and contemporaneity. Mathematics emphasizes logical thinking and large-scale numerical calculations, while science advocates for scientific research and exploration. Consequently, different disciplines require different types of talents. In subjects like Chinese and history, which emphasize meaning interpretation and value judgment, talents are typically needed who are active thinkers, skilled at making associations, and capable of deeply understanding the cultural implications and emotional logic behind texts (empathy). These students have a strong perception of life's details. In contrast, subjects like English and politics require students with strong memory skills and keen linguistic intuition. Subjects like mathematics, physics, and science need talents who demand high accuracy, have superior spatial thinking abilities, rigorous logical thinking, the ability to construct and solve problems, and strong error transformation capabilities (annotating problem-solving approaches, correcting erroneous plans). Therefore, subjects like Chinese and history tend to focus on cultivating literary accumulation, while subjects like mathematics and physics emphasize the development of error transformation mechanisms and transferable skills.

3.2. The Classification of Human Personalities

There are many personalities classification models, such as the Enneagram and the Big Five personality traits. Due to its stable structure and cross-cultural applicability, the Five-Factor Model of personality is widely adopted in educational psychology.

This study employs the Big Five personality model, which categorizes personality traits into five dimensions: neuroticism, extraversion, openness, agreeableness, and conscientiousness. Different levels of these dimensions represent different personalities, offering a wide range of combinations and reflecting the diversity of human personalities.

Openness reflects an individual's acceptance of novelty, imagination, and curiosity. People with high openness are typically creative and enjoy exploring new ideas, while those with low openness tend to be more traditional and practical. Conscientiousness represents goal-directed behavior, self-discipline, and a sense of responsibility. Individuals with high conscientiousness are usually reliable and organized, whereas those with low conscientiousness may be more spontaneous. Extraversion measures the tendency for social interaction and energy sources. People with high extraversion are enthusiastic and talkative, while those with low extraversion (introversion) are quieter and prefer solitude. Agreeableness describes the tendency towards harmonious interpersonal relationships, such as cooperativeness, empathy, and trust. Individuals with high agreeableness are friendly and tolerant, while those with low agreeableness may be more competitive or suspicious. Neuroticism characterizes emotional stability. People with high neuroticism are prone to anxiety and mood swings, while those with low neuroticism are calmer and more resilient [6].

3.3. Relationship Analysis

Personality is a relatively stable attitude of an individual towards reality, as well as the personality traits manifested in habitual behavior patterns corresponding to such attitudes. Here, 'student personality' is transformed into standardized assessment data of the five major personality dimensions, while also confirming its correlation with course preferences and academic choices.

In recent years, many studies have found that certain dimensions of the Big Five personality traits are consistently associated with performance in specific subjects. Surveys indicate that conscientiousness, openness, and agreeableness are positively correlated with academic performance, while neuroticism is negatively correlated [7]. Among these, 'openness' and 'conscientiousness' are particularly related to subject-specific performance. Scholarly research indicates that students' personality characteristics are linked to their interest in subjects and their academic performance in specific fields. Students with high levels of openness are more likely to choose arts-related subjects, while those with high conscientiousness tend to excel in math and science subjects [8]. Behaviors such as persistence and self-discipline significantly impact the development and maintenance of subject advantages [9]. Studies show that openness is highly correlated with emotional understanding and value judgment in academic learning, with a correlation coefficient of 0.34. From a trait perspective, individuals with high openness tend to excel in humanities and social science courses [10]. Students with high openness typically perform better in subjects like Chinese and history. Additionally, Nofle and Robins in 2007 found that students with high conscientiousness achieve better grades in logic-based subjects like mathematics, with an effect size of 0.28 [11].

People with high openness are more imaginative, creative, curious, and have a spirit of exploration. Openness is related to interests and abilities in fields such as art, culture, and science. Individuals with high openness may be more willing to accept new perspectives, try new experiences, and explore unknown areas. In the open-ended introduction, it can be observed that individuals with high openness possess imaginative traits that align with the active and associative thinking required for subjects such as literature and history. Conscientiousness involves the degree to which an individual sets goals, plans, self-regulates, and executes tasks. People with high conscientiousness are typically organized, reliable, self-disciplined, and responsible. Responsibility is related to goal achievement, time management, and job performance. People with high responsibility are usually more willing to put in effort, pursue success, and maintain self-discipline. The organization and pursuit of success

associated with responsibility align with the logical consistency and persistence required in subjects such as mathematics and physics. This study concludes that different disciplines require corresponding learning strategies for their respective talents, which then evolve into behavioral habits. This indicates that certain students' personalities and behaviors may match the characteristics needed for specific disciplines, potentially making them suitable for those fields.

4. Recommend--Personalized Education

4.1. Currently Existing Issues

Current research has demonstrated that subject strengths are related to students' own personalities, but traditional education still perpetuates erroneous perceptions of gender diversity in subjects, such as the stereotype that girls excel in humanities while boys excel in sciences.

This can also lead to a crude categorization of disciplines, dichotomizing them into two opposing categories, which, to some extent, fosters disciplinary bias and creates a confrontational situation. On this basis, students choosing different disciplines are crudely classified into liberal arts students or science students, ignoring the individual needs of students for the development of disciplines and hindering their diverse development.

Moreover, many students face an irreconcilable contradiction between their interests and the number of optional majors, or between the difficulty of their chosen subjects and their personal interests. These issues significantly impact their future development, such as university major selection. Under the current social environment and limited major choices, many students are forced to choose disciplines with broad employment prospects or wider major options, but these do not align with their personal traits, leading to difficulties in studying these subjects. Additionally, the development of the Chinese language discipline has been greatly challenged due to the demands of contemporary society. With the increasing need for innovative talents, there have been frequent criticisms of the Chinese language discipline. At the same time, students who choose traditional humanities subjects or non-traditional science subjects face severe challenges in university major selection and future employment, which is detrimental and, to some extent, deprives the space for the development of humanistic and social science talents.

4.2. Recommendation

Based on Holland's theoretical framework from 1997, there is often a significant correlation between individuals' interest types (such as realistic, social, artistic, etc.) and their career choices. These interest traits typically align with learning interests and personality characteristics, following a developmental trajectory from personality to behavior, subjects, and majors, which can construct the intrinsic logical relationship of student growth [12].

In recent years, as stereotypes have been broken, the gender ratio in science fields has gradually approached 1:1, indicating that many girls have the potential to become talents in STEM disciplines. Additionally, using pointed out that the main gender differences in the field of intelligence seem to lie in the differentiation of ability types, and this difference does not indicate superiority or inferiority in intelligence levels, so there is no difference in intelligence between boys and girls, and both genders have equal advantages in different subjects. It can be concluded that there is no direct impact between gender and subject bias (excluding the influence of social stereotypes), and what affects subject bias are the students' individual behavioral habits, personality, and other comprehensive factors [13].

Society should encourage students to understand their own personalities and behavioral habits, and to develop personal interests. During the middle school stage, schools should actively provide diverse subject education, make detailed classifications for students with different course selections, and choose diverse teaching methods based on the different characteristics of the students.

Schools, parents, and students can collaborate to make plans for the future based on the individual characteristics of the students. Schools offer courses related to course selection and university major

choices to help students find suitable matches in their subjects. This supports the personalized development of students and helps them identify appropriate directions for their future.

Teachers should provide proper guidance to students, helping them establish a correct perspective on the humanities. This involves making students aware of the humanistic, ideological, open, inclusive, foundational, and instrumental nature of the humanities. It is crucial to conduct ideological education and objectively recognize the challenges and opportunities facing the humanities in today's development. Additionally, efforts should be made to promptly align subject selection with major selection, truly addressing and dispelling the rigid perception of dualism in disciplines from the source.

Given the current state of education, society should deeply understand how students' personality, behavior, and habits affect their strengths and weaknesses in different subjects. It is important to actively break down dualism and gender stereotypes, encouraging students to combine their personal characteristics and develop in fields that suit them best.

5. Conclusion

This paper primarily explores the relationship between students' personality, behavioral habits, and their academic strengths and weaknesses. It categorizes students' personalities using the Big Five personality model and matches their group behavioral habits with the traits required for different subjects. The study concludes that students' academic weaknesses are related to their individual personality characteristics and the behaviors that highlight these traits. Future research could investigate the generation of students' personalities and behavioral habits in relation to their physiological structures, as well as explore teaching methods suitable for different personality types.

Authors Contribution

All the authors contributed equally, and their names were listed in alphabetical order.

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