

# Challenges and Effective Strategies in Cultivating Non-Intellectual Factors of Secondary Vocational Students

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**Abstract:** *Non-intellectual factors are the core dimensions of human comprehensive quality, which is the key link to enhance the effect of talent cultivation in vocational education in China. However, the cultivation of non-intellectual factors of secondary vocational students faces three major challenges in the current Chinese context: firstly, the inherent cognition of vocational education in the social and cultural context creates a psychological obstacle for students to accept and value their learning; secondly, compared with ordinary high schools, secondary vocational schools are still insufficient in terms of teacher deployment and educational equipment, which affects the quality and diversity of teaching; finally, given the physiological and psychological development characteristics of secondary vocational students, they tend to show deficiencies in the areas of emotional communication, value stability, and social skills, which hinder their personal growth and career development. In order to cope with the above problems, specific cultivation strategies should be based on the five dimensions of government, schools, teachers, families and students. It is necessary to build a new vocational education framework that emphasizes the integration of knowledge and skills, optimize the education evaluation system that reflects the development of non-intellectual factors, enhance the educational awareness and competence of teachers who can guide and inspire students, deepen the collaboration between home and school that can provide a supportive environment for students, and stimulate the intrinsic learning motivation of students that can drive them to pursue excellence.*

**Keywords:** *secondary vocational students, non-intellectual factors, comprehensive quality, cultivation strategy*

## 1. Introduction

The Twentieth Party Congress emphasized that education, science and technology, and human resources are the basic and strategic support for the comprehensive construction of a modern socialist country. The new era establishes a new goal for education, which requires vocational education to cultivate high-quality skilled personnel who can meet the needs of industry development. As China's demographic dividend shifts to talent dividend, the comprehensive quality of talents has become the focus of attention. The comprehensive quality of talents is reflected in their emotions, behavior, social skills, values, learning ability and other aspects, which are not only affected by intellectual factors but also by non-intellectual factors. Non-intellectual factors were firstly proposed by American psychologist W. P. Alexander in 1935 as the factors that affect intelligence but are not measured by intelligence tests. Later, D. Wechsler proposed the concept of "non-intellectual factors in intelligence" and argued that they play an important role in human adaptation and success. The Chinese scholar Yan Guozhai divided non-intellectual factors into three levels: broad non-intellectual factors, narrow non-intellectual factors, and specific non-intellectual factors. He believed that non-intellectual factors are more volatile than intellectual factors, and that they can be used to promote intellectual activities and supplement certain weaknesses in intellectual factors through directional guidance and reinforcement regulation<sup>[1]</sup>.

Non-intellectual factors are crucial for the development of students, and unlike the intellectual qualities that are largely determined by genetics, non-intellectual factors depend mainly on education and cultivation acquired through learning and experience. However, in secondary vocational schools,

professional courses are often based on the goal of cultivating high-quality skilled talents, focusing on teaching students professional knowledge and skills, while neglecting the cultivation of non-intellectual factors. Therefore, this study aims to address the real problems existing in the development of secondary vocational education, to analyze the physical and mental characteristics of secondary vocational students, to refer to the relevant theories of pedagogy and psychology, and to propose effective cultivation strategies for enhancing the non-intellectual factors of secondary vocational students.

## 2. The difficulties faced by the cultivation of non-intellectual factors for secondary vocational students

### 2.1. Cultural environment factors: The social and cultural atmosphere affects the healthy development of non-intellectual factors for secondary vocational students

The Report on Large-scale Questionnaire Survey on the Development of Vocational Education in China conducted an extensive survey of secondary vocational schools, families and related enterprises across the country, and received 106,125 valid questionnaires. It found that 68.62% of the respondents believed that the biggest difficulty faced by the development of vocational education at present is the social recognition<sup>[2]</sup>. Although the state has supported, guided and publicized vocational education through legislation, policies and public opinion, the traditional inferior status of vocational education has not been completely improved in the minds of the masses. The public forms prejudices and misunderstandings about vocational education and students who receive vocational education based on stereotypes, labeling vocational education with a certain tag. The negative socialization information affects more than that<sup>[3]</sup>. The group members who are criticized by prejudice also suffer from cognitive and behavioral influences, and eventually prove those stereotypes that were not true in the first place. 3 The long-term existence of prejudice against vocational education in society may cause students who receive vocational education to bear more pressure in terms of external environment. This persistent social bias may have a negative impact on students' psychological state, thereby restricting their intrinsic motivation for self-development. If students cannot actively exert their individual initiative, their self-orientation and efforts may be weakened, which will reduce the intervention effect of schools and teachers on students' non-intellectual factors. Therefore, the social stereotypes and expectations of vocational education form a negative interaction with the cultivation of non-intellectual factors, affecting students' intrinsic drive, as well as weakening the performance of schools and teachers in cultivating non-intellectual factors.

### 2.2. Objective conditions of vocational education: secondary vocational schools are still in a disadvantaged position compared to ordinary high schools

Compared with ordinary high schools the secondary vocational schools have lower educational conditions, such as the quality of teachers, the availability of teaching facilities and materials, which pose a certain challenge for the cultivation of non-intellectual factors of secondary vocational students. Based on the data related to vocational education published by the Department of Development Planning of China's Ministry of Education in 2022<sup>[4]</sup>, there is a noticeable gap between secondary vocational schools and ordinary high schools in terms of student-teacher ratio, per capita area, and teachers' qualifications, etc. The basic data are shown in the table below.

Table 1: Comparing educational conditions at ordinary high schools and secondary vocational schools.

	Ordinary high schools	Secondary vocational schools
Number of schools	14585	7294
School attendance	27,138,700	13,392,900
Floor area of school buildings(m <sup>2</sup> )	680,349,000	275,160,900
Number of teachers	2133200	718,300
Educational level of teachers(Postgraduate or above)	13.08%	8.91%
student-teacher ratio	12.72:1	18.65:1
Dormitory space per student(m <sup>2</sup> )	25.07	20.55

The student-teacher ratio is the ratio of the number of students to the number of full-time teachers, and it is often used as an important indicator of the effectiveness of school operation in educational

assessment<sup>[5]</sup>. The higher the student-teacher ratio, the higher the utilization rate of social resources, but the lower the quality of teaching under certain conditions of educational resources, because the capacity and energy of teachers are limited<sup>[6]</sup>. From the basic national data, it can be seen that the student-teacher ratio in secondary vocational schools is much higher than that in ordinary high schools, and each full-time teacher in secondary vocational schools has to deal with more students and greater teaching pressure.

Per capita dormitory area is one of the important indicators for evaluating the quality of school operation and infrastructure conditions. A higher per capita dormitory area means that the school has invested more resources and energy in dormitory construction and management, and can provide better living conditions for students. A spacious, clean and comfortable dormitory environment helps to improve the quality of students' study and life, enhance students' sense of belonging and cohesion, and is conducive to students' comprehensive quality development. The per capita dormitory area in secondary vocational schools is only 80% of that in ordinary high schools, which indicates from the data that there is still room for improvement in the infrastructure conditions of secondary vocational institutions.

From Table 1, it can be seen that the proportion of teachers with postgraduate qualifications or above in the secondary vocational school teaching force is relatively small, and there is still a certain gap compared with that of ordinary high schools. Teachers' academic level cannot fully represent their teaching ability, but the higher the overall academic level of the teaching force, the higher the quality of education services can be provided to students, and the quality and fairness of education can be improved. On the other hand, the higher education level of the teaching force also provides more favorable support for the subsequent development of education.

### ***2.3. Physical and mental characteristics of students: the non-intellectual factors of secondary vocational students are special***

Secondary vocational students are mainly between 15 and 18 years old, and are in the transition between late adolescence and early adulthood in Erikson's eight stages of psychological development. At this stage, students have nearly mature physiology but immature mind, and they still need support and guidance from parents and teachers. Students' individual psychological development is rapid and plastic, which is the best time to cultivate non-intellectual factors. Secondary vocational students are in the same stage of physical and mental development as ordinary high school students receiving general education, but they have some differences in their non-intellectual factors compared with general education students, and the specific characteristics are shown in the following aspects:

1) Many secondary vocational students experience insufficient emotional communication during their growth process, which negatively affects their emotional needs and expression ability. According to the status quo survey, these students have problems of emotional instability, detachment and negativity at the emotional level<sup>[7]</sup>. Especially for some specific groups, such as left-behind children, due to the long-term separation from family members, they often lack close emotional bonds, resulting in a significant gap in their emotional support and identity. Combined with the physiological and psychological changes of adolescence, the emotional needs of these students become particularly urgent. If these needs are not properly addressed and satisfied, students may suffer from mood swings and emotional anxiety, further affecting their academic and daily life stability.

2) The concept of active learning has not been established. Xie Xinnian and other scholars compared the mathematical learning literacy between vocational and ordinary high school students through statistical modeling, and found that there is no significant difference between vocational and ordinary high school students in terms of high-level mathematical thinking, while non-intellectual factors such as learning attitudes, habits, methods, and environments are the prominent weaknesses of vocational students<sup>[8]</sup>. Some secondary vocational students may have negative emotions of boredom and low self-esteem after failing in the midterm examination, which leads to their overall low interest in learning, lack of full understanding of the concept of vocational education, and lack of a clear plan for future development, which results in a lack of motivation and difficulty in developing good study habits.

3) In terms of values, most secondary vocational students come from rural areas, and their families' financial situation is not favorable, but some secondary vocational students are influenced by the corrupt culture of society, and have the ideology of "money comes first, and enjoyment comes before struggle"<sup>[9]</sup>. In the information age, information spreads faster and has a wider impact, and secondary vocational students, limited by their upbringing and cognitive level, lack the ability to filter and screen information, and are easily misled by undesirable values in fast-paced information platforms such as live broadcasting, streaming media and short videos.

4) In terms of social interaction, secondary vocational students have limitations in their understanding compared to adults. Adolescence is an important growth period in life, and many secondary vocational students face different degrees of social problems at this stage. Compared with adults, secondary vocational students have their limitations in interpersonal communication. In the stage of adolescence, students' thinking is active, emphasizing individuality and independence, but at the same time, their own psychological development is not mature enough, and they lack experience in social communication skills and problem-solving ability, which leads to their being in a contradictory and conflicting state of mind from time to time. This situation will not only affect the interaction between classmates, but also affect the students' future performance in the workplace when they enter the society.

### 3. The Realistic Necessities of Non-Intellectual Factor Cultivation for Secondary Vocational School Students

The concept of non-intellectual factors is broad and rich in connotations. In order to analyze the problem more specifically, this paper, based on the methodological basis of qualitative research and the results of existing studies at home and abroad, divides non-intellectual factors into two levels: foundational factors and growth factors, as shown in Figure 1. Among them, emotional attitude and social interaction skills are the foundational factors in students' comprehensive quality, which are essential abilities for students' personal growth and future development, and largely affect students' life planning and career choices. Learning awareness and values are the growth factors of students, and the growth factors determine whether students can have a long-term development in this field in the future.

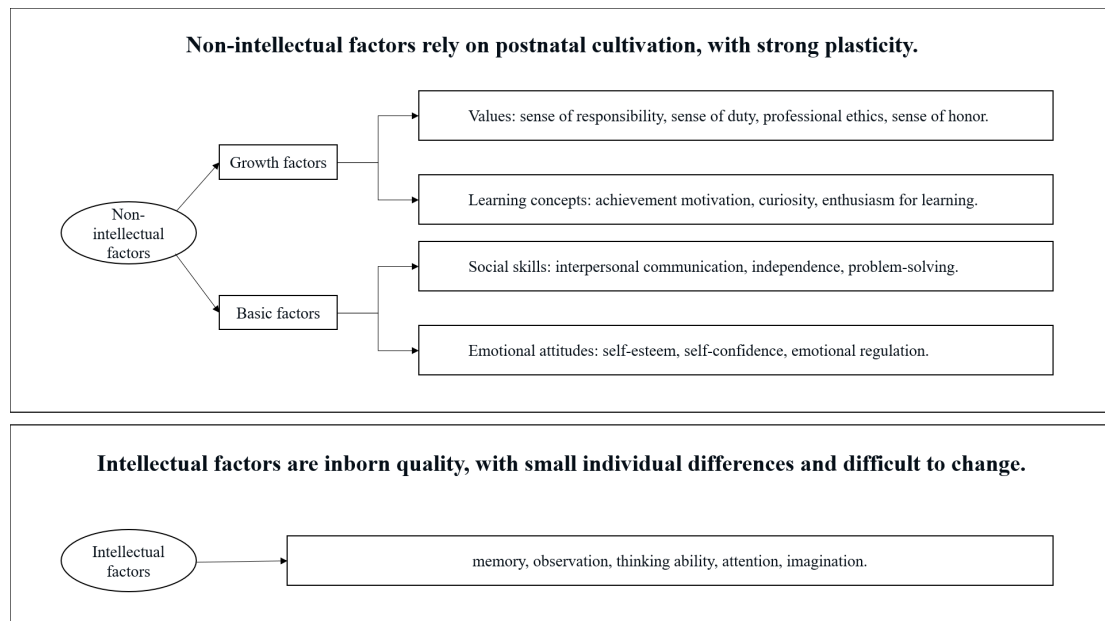


Figure 1: Factors influencing the overall quality of students.

Vocational education in the new era has higher requirements for the quality of talent cultivation, and needs to take into account the new tasks of enlightening students' minds, broadening their horizons, and promoting their all-round development while teaching them professional skills. Vocational education has obvious typological characteristics, and its cultivation goal mainly focuses on students' practical application ability, which in the long run leads to some students' thinking stereotype of "emphasizing skills and neglecting thoughts", that is, paying too much attention to practical skills but neglecting the importance of depth of thinking and other comprehensive qualities.

#### 3.1. Cultivation of non-intellectual factors is a necessary path for the overall development of secondary vocational school students

In order to nurture students who are socially adaptable and equipped with all-round skills, purely intellectual factors can no longer meet the comprehensive requirements of modern society for secondary vocational students. Non-intellectual factors, such as values, outlook on learning, social skills, emotional attitudes, etc., are the key factors determining whether students can successfully cope with the challenges and realize their self-worth in various vocational and social situations in the future. These non-intellectual

factors largely influence students' ways of thinking, behavioral choices and life planning, and provide them with the cornerstones for a successful foothold in the complex and changing world.

### ***3.2. Cultivation of non-intellectual factors is an important component of moral education in the new era***

The new era has put forward higher requirements for moral education, emphasizing the cultivation of socialist builders and successors with all-round development in morality, intelligence, physicality, aesthetics and labor. Moral education is no longer limited to traditional moral education, but pays more attention to cultivating students' comprehensive personality development. Among them, non-intellectual factors, as an important part of personality development, occupy an important position in moral education in the new era. By cultivating non-intellectual factors such as emotional attitudes and social interaction skills, secondary vocational students can enhance their sense of responsibility, innovation and teamwork ability, so that they can better contribute to society.

### ***3.3. Development of non-intellectual factors as a priority task in modernizing educational reforms***

With the development of society and the trend of globalization, the objectives and contents of education are constantly being adjusted. Modern educational reforms emphasize the whole-person development of students and the cultivation of lifelong learning abilities. In this context, the cultivation of non-intellectual factors has been given unprecedented importance. It is not only about students' immediate academic results, but also about their future development and contribution to society. The modernization of education reforms aims to produce composite talents with both solid subject knowledge and a wide range of non-intellectual skills to meet the challenges of the 21st century. Therefore, the cultivation of non-intellectual factors is not only a key task of education reform, but also a core element in the modernization of education.

## **4. Effective Strategies for the Cultivation of Non-Intellectual Factors in Secondary Vocational School Students: A Multi-party Co-construction**

Non-intellectual factors are not inherent qualities and need to be cultivated, strengthened and consolidated through education as students grow. Therefore, the following practical recommendations are made from the perspectives of the Government, schools, teachers, families and students:

### ***4.1. Investing in building a new pattern of vocational education and breaking the stereotype of vocational education***

In promoting vocational education, the Government should, first of all, clarify the positioning and direction of vocational education on the basis of policy adjustments<sup>[10]</sup>. Through financial support, it should ensure that vocational education institutions have sufficient resources to optimize the educational environment and improve the quality of education. In addition, public awareness campaigns play an indispensable role, reaching every corner of society through various channels to reshape people's perception of vocational education. Combined with enterprise and community cooperation, vocational education can be closely linked to the actual work market, and train talents who really meet the market demand. It must be clear that changing the inherent concepts is not a quick fix; it is a long-term process that requires the joint efforts of the government, the education sector, the community and even families and students.

The Government should encourage society to re-recognize the value and significance of vocational education through policy adjustments, financial support and public awareness campaigns. At the same time, it should emphasize cooperation with enterprises and communities to better match vocational education with market demand. The shift in society's perception of vocational education is an ongoing process that requires time, patience and comprehensive strategies.

### ***4.2. Strengthening campus culture and reconstructing a diversified educational evaluation system***

Secondary vocational schools should incorporate non-intellectual factors into their evaluation systems, fully recognizing that, in addition to academic performance and skills, students' other abilities and attributes are equally important. From the perspective of teaching evaluation, they should break the thinking of "only the theory of scores" and pay more attention to cultivating the overall quality of students.

In order to truly reflect the comprehensive quality of students, vocational education institutions need to carry out in-depth reform of the evaluation system. This not only includes the inclusion of non-intellectual factors in the scope of evaluation, but also needs to establish a more fair, comprehensive and open assessment model. Competencies such as teamwork, innovative thinking, moral character and social skills are key competencies necessary for students in the future workplace. Therefore, it is no longer sufficient to rely solely on academic performance and skill manipulation for assessment. In the face of this situation, educators should challenge the traditional “score-based” thinking and focus on how to more comprehensively cultivate and assess students’ overall abilities and personal attributes, so as to help them prepare for their future careers in a more holistic manner.

#### ***4.3. Strengthening teachers’ awareness of teaching and effectively fulfilling their duties in educating students***

Teachers, as the concrete implementers of educational activities, have a direct influence on students<sup>[11]</sup>. The development of non-intellectual factors is more affected by the influence of acquired training, in this process, teachers play an important role. “Learning as a teacher, the body as a model,” they are not only the transmitter of knowledge, but also the guide in the growth of students. Therefore, in the process of educating people, teachers need to deeply understand the students’ personality characteristics, and make corresponding teaching plans and implementation rules for the actual situation, in order to better guide the development of students’ non-intellectual factors. In addition, more secondary vocational students lack external support due to social or family reasons. Therefore, teachers need to pay more attention to the students' non-intellectual factors, and provide students with more attention and spiritual support from the perspective of educators. In classroom teaching, they should strengthen their own teaching consciousness, help secondary vocational students to establish a correct outlook on life, values and worldview, guide them to resist setbacks, and cultivate their good sense of social responsibility and moral character.

#### ***4.4. Emphasize the importance of popularizing family education, home-school cooperation in cultivating secondary vocational school students***

The family is the first environment in which a child grows up, and parents are the first teachers in the process of students' development<sup>[12]</sup>. The Government and schools should strengthen education and guidance for parents, helping them to understand the importance of non-intellectual factors and providing specific strategies for their development, so as to encourage parents to emphasize the importance of communication and emotional ties with their students, and to help students to develop sound psychological and social adaptability. Social education, school education and family education are indispensable, but some parents have the wrong idea of "school education does everything", which leads to the absence of family education for many secondary vocational students. The influence of family education and family environment on secondary vocational students is very important. However, since many secondary vocational students have relatively poor family conditions and lack of family support, it is necessary for schools to strengthen the cultivation of non-intellectual factors for secondary vocational students, and to cultivate them in an all-round and multi-level way from classroom education to extracurricular activities. Therefore, schools should take the initiative to assume the main responsibility of education, establish a close cooperation mechanism with students' families, and jointly promote the comprehensive development of students.

#### ***4.5. Stimulating students' sense of subjectivity and strengthening their internal motivation***

Students are the core subjects of non-intellectual factors cultivation. Middle school students are in adolescence and have a strong need for self-expression. If their inner pressure and emotions cannot be effectively released, they will often be transformed into questioning their self-worth and deep psychological entanglements. For this reason, students should be actively guided to participate in the process of their own development in order to cultivate their self-management and self-motivation skills. Although the focus of secondary vocational school education is on operational skills and basic knowledge, educators need to create ample space for students to express themselves, for example, by organizing vocational skills competitions, clubs, or special class meetings. Such practical activities not only provide students with relief from academic pressure, but also provide them with a relaxing and useful platform to interact with others, which helps them deepen their self-understanding, strengthen self-acceptance and self-expression, and exercise their sense of ownership and ability to face challenges positively.

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