

Factors Influencing for Learning Engagement of Secondary Vocational School Students in Shenzhen, China

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Received: June 3, 2023 Revised: August 28, 2024 Accepted: December 6, 2024

Abstract:

Vocational education provides strong talent and intellectual support for China's economic and social development. Secondary vocational education is the core content of vocational education, not only the focus of vocational education, but also the key to the high-quality development of vocational education. As an important educational process indicator, learning engagement is not only positively correlated with students' learning outcomes, but also an important indicator for measuring the quality of school education and teaching. In this context, exploring the learning engagement of vocational school students and its influencing factors has significant practical significance and policy value for controlling the process quality of vocational education, formulating policies for the development of vocational education, and promoting the high-quality development of vocational education.

This study is based on an empirical survey of 3 schools in 3 districts of Shenzhen, Guangdong Province, China. Multiple linear regression techniques and other methods are used to explore the learning engagement and its influencing factors of vocational school students around three learning engagement indicators: learning cognitive engagement, learning emotional engagement, and learning behavior engagement. Draw the following conclusion:

Firstly, the identity of class cadres has a significant impact on the learning engagement of vocational school students. From the perspective of class cadre identity, students who serve as class cadres have significantly higher levels of learning cognitive engagement, emotional engagement, and behavioral engagement than students who do not serve as class cadres. From a gender perspective, there is a significant gender difference in the learning behavior engagement of vocational school students, which is likely related to the particularity of vocational schools. Vocational schools emphasize hands-on practical skills and have more practical courses, which are more suitable for boys' characteristics.

Thirdly, family social networks and family relationships have a significant impact on the learning engagement of vocational school students. The more harmonious the family relationship, the better the family social relationship, and the higher the level of students' learning cognitive engagement, emotional engagement, and behavioral engagement. In

addition, families with medium family social network and economic conditions possess social and economic capital, creating an excellent growth environment for students and improving their learning abilities. So vocational school students who live in very difficult and wealthy families need to be widely concerned.

Fourthly, school factors have a significant impact on the learning engagement of vocational school students. From the perspective of all school factors, compared to school hardware facilities, factors such as school atmosphere, teacher teaching ability, teacher engagement, and teacher attention have a relatively stronger impact on students' learning engagement.

Therefore, this study proposes corresponding policy recommendations from the following aspects: firstly, establishing a scientific view on education quality, and focus on the process-based evaluation of vocational school students. Secondly, increasing attention to vulnerable groups and increase investment comprehensively. Specifically, we need to optimize the free and subsidy policies for vocational school students, increase support for their independent choice of majors, and increase attention to vulnerable vocational school students in teaching. Thirdly, we should create a good campus environment, increase the support of teachers and peers, achieve the integration of industry and education, optimize resource allocation, create a harmonious and symbiotic campus cultural environment, establish good teacher-student relationships, and form a good peer learning community. Fourthly, trying to create a harmonious family atmosphere, leverage the supportive role of the family, prioritize nurturing with care and understanding, establish good parent-child relationships, and achieve family school cooperation in education. Fifth, students should increase their personal investment in learning and 'self-enhance' continuously. Through students' own learning efforts, they can enhance their learning abilities, cultivate learning habits, set learning goals, stimulate learning interest, exercise learning perseverance, increase educational gains, and improve learning performance.

Key words: Vocational education, Secondary vocational school students, Learning engagement.

Introduction

The economy in China is in a critical period of transition from rapid growth to high-quality development. In order to combat poverty and construct an all-around moderately wealthy society, the rise in the proportion of tertiary industry has produced favorable conditions for boosting people's livelihoods and employment, and promoted regional coordinated development and other major national strategies and major work has been effective. Under the new pattern of promoting high-quality development and accelerating innovation-driven development, the demand for technology-intensive

talents continues to increase, and the national professional talent gap increases. Under the dual impetus of policy and demand, China needs a large, stable and high-quality professional and technical talent team to meet the needs of national strength competition and meet the domestic employment demand, because the importance of vocational education is increasingly prominent.

Modern vocational education is employment-oriented and highly compatible with national industrial structure adjustment, manufacturing power strategy, rural revitalization strategy, etc. President Xi (2021) emphasized the significance of vocational education during the 2021 National Conference on vocational education. "Vocational education has a bright future and huge prospects in the new adventure of constructing a socialist contemporary nation in an all-around fashion. We should strengthen the adaptability of vocational education, focus on building a scientific and standardized vocational education system, and cultivate excellent skilled craftsmen and big country craftsmen for the development of the country ". High-quality skilled talents are the important foundation to support the "Made in China" and "Created in China", and the cultivation of high-quality skilled talents needs the realization of high-quality vocational education training system. secondary vocational education is not only the core content of vocational education, but also the key to comprehensively promote the common development of vocational education and general education and explore the integration of general vocational education. It is also the foundation of the integrated training system of vocational education. Improving the learning quality of secondary vocational school students is the key to the high-quality development of vocational education. It is also the core of the reform of talent training system in vocational education.

Learning engagement is an important indicator dimension to measure students' learning quality, and promoting students' learning engagement is an important way to improve students' learning quality (Yang Lijun & Zhang, 2016) . This study examines the relationship between secondary vocational school students' learning cognitive engagement, learning emotional engagement, learning behavior engagement, and individual, family, school, family economic conditions. It also examines ways to enhance the learning quality of secondary vocational school students and assists secondary vocational schools.

Research Objective

1. To study the dimensions of learning engagement of secondary vocational school students in Shenzhen.
2. To explore the relationship between the influencing factors and the dimensions of the learning engagement of secondary vocational school students in Shenzhen.

3. To provide a reference for promoting the high-quality development of vocational education and improving the talent quality of secondary vocational school students in Shenzhen according to this research.

Methodology

The target population in this study are students who studies in the secondary vocational schools in China. Considering the convenience and operability of the empirical investigation, the author chooses Shenzhen City as the research site, where the author lives. According to the data in 2022 Shenzhen Secondary Vocational School Annual Quality Report released by Shenzhen Education Bureau, there are 28 secondary vocational schools, with total about 80,000 students study there (Shenzhen Education Bureau, 2022). This study will randomly select at least 398 students who studies in secondary vocational schools for questionnaire survey. To make sure the objectivity and effectiveness of the samples selected in this research, this research followed the basic principle of probability sampling in the sampling method, and selected 3 secondary vocational schools for investigation.

Through the questionnaire survey, we can understand the distribution and overall performance of the research objects as widely as possible, and lay the necessary foundation for further data analysis. The design of the questionnaire is essentially a concrete operation of the content framework determined previously. It is based on the structure of the learning engagement measurement framework of secondary vocational school students, transforming it into specific questions in order to collect first-hand survey data. This study mainly draws on the three dimensions of students' learning engagement in The China College Student Survey (CCSS), including learning cognitive engagement, learning emotional engagement and learning behavior engagement. In combination with the development characteristics of secondary vocational school students, this study adds topics with characteristics of secondary vocational school students' learning engagement to form the secondary vocational school students' learning engagement scale.

This study will further test the reliability and validity of the questionnaire and the scale, and use the principal component analysis to obtain learning cognitive engagement, learning emotional engagement and learning behavior engagement. Part 1 is about the personal basic information. Part 2 is the part of questions related to the learning engagement status of the students. Part 3 is the part of questions related to the learning environment status. Of these, part 1 was analyzed and presented using frequency and percentage, while part 2 and part 3 were scaled questions following the 5 scale of Likert scale.

Finally, this research collected 410 questionnaires from three typical secondary vocational schools in Shenzhen, and analyzed the data by using SPSS to compute for the result. The questionnaire of this research has been designed 39 questions, in which Q1 to Q32 describe the demographic and basic personal study information of respondents; Q33 to Q38 contain learning engagement cognitive scale, learning engagement emotional scale and learning engagement behavior scale; Q39 is learning environment state scale.

Results

Demographic Characteristics of Respondents

This part describes the demographic and basic personal study information of respondents. Generally speaking:

1. The data of the respondents shows that there are 410 respondents, in which 197 males and 213 females, and their academic performances in classes are different.
2. More than 77% of respondents' fathers with less than college degree, while more than 83% of the respondents' mothers with less than college degree. This proves that parents of secondary vocational school students are not highly educated and can give their children less support in learning.
3. Almost 70% of parents of secondary vocational school students work as workers, commercial service personnel and self-employed or commercial personnel. This also reflects that these parents' work is relatively busy with low income, who can't support their children learning well.
4. More than 95% respondents' family economic conditions are general or below.

Testing Hypotheses

In order to better explain the interaction among individual, family, school and learning engagement of secondary vocational school students, this study uses regression analysis method to test the hypotheses.

H1a: Individual factors have a significant impact on learning cognitive engagement of secondary vocational school students.

Statistics show that there is no significant gender difference in the level of learning cognitive engagement of secondary vocational school students. There was no significant difference in the scores of learning cognitive engagement between only children and non-only children. There was no significant difference in the scores of cognitive engagement between secondary vocational school students with and without transfer experience. Whether or not to serve as a class leader has a significant impact on the learning cognitive engagement of secondary vocational school students. Compared with the students who do not serve as class leaders, the standardized score of learning cognitive engagement level of students who serve as class leaders is significantly higher than 0.308 points

($p < 0.001$).

H1b: Individual factors have a significant impact on learning cognitive engagement of secondary vocational school students.

Statistical data shows that there is no significant gender difference in the level of learning emotional engagement of secondary vocational school students. There is no significant difference in the scores of learning emotional engagement between the only child and the non-only child. There is no significant difference in the scores of emotional engagement between secondary vocational school students with and without transfer experience. Being a class leader has a significant influence on students' learning emotional engagement. Compared with students who are not class leaders, students who are class leaders have a significantly higher standardized score of 0.307 points ($p < 0.001$).

H1c: Individual factors have a significant impact on learning cognitive engagement of secondary vocational school students.

There is a significant gender difference in the learning behavior engagement of secondary vocational school students ($p < 0.1$), and boys' learning behavior engagement is 0.068 points higher than girls'. There is no significant difference in the scores of learning behavior engagement between the only child and the non-only child. Transfer experience has a significant influence on students' learning behavior engagement ($p < 0.01$). Being a class leader has a significant impact on the learning behavior engagement of secondary vocational school students ($p < 0.001$).

H2a: Family factors have a significant impact on learning emotional engagement of secondary vocational school students.

The educational level of parents has a significant positive impact on the learning cognitive engagement of secondary vocational school students ($p < 0.1$). The score of students' learning cognitive engagement will increase by 0.013 points for each unit of improvement of parents' educational level. The data shows that parents' occupation and family economic conditions have no statistically significant impact on students' learning cognitive involvement, while family relationship and family social network have a significant positive impact on students' learning cognitive involvement score ($p < 0.001$). This shows that the higher the education level of parents, the more harmonious the family relationship, the better the family social relationship, and the higher the level of students' learning cognitive engagement.

H2b: Family factors have a significant impact on learning emotional engagement of secondary vocational school students.

The level of parents' education has a significant positive influence on the learning emotional engagement of secondary vocational school students ($p < 0.1$). Parents' occupation and family economic conditions have no statistically significant influence on

this aspect, while family relations and family social network have a significant positive influence on this aspect ($p < 0.001$). For each unit of increase in family social network score, students' learning emotional engagement score increases by 0.004 points. The more harmonious the family relationship is, the better the family social relationship is, and the higher the level of students' learning emotional engagement is.

H2c: Family factors have a significant impact on learning emotional engagement of secondary vocational school students.

The data shows that parents' education level, parents' occupation and family economic conditions have no significant impact on the learning behavior engagement of secondary vocational school students in statistics. Family relationship and family social network have a significant positive impact on the learning behavior engagement score of students ($p < 0.001$). The more harmonious the family relationship is, the better the family social relationship is, and the higher the level of students' learning behavior engagement is.

H3a: School factors have a significant impact on learning behavior engagement of secondary vocational school students.

School hardware facilities, school atmosphere, teachers' teaching ability, teachers' engagement, and teachers' attention have a significant positive impact on the learning cognitive engagement of secondary vocational school students ($p < 0.001$). The better the school hardware facilities, the more harmonious the school atmosphere, the higher the teachers' teaching ability, the more teachers' engagement, the higher the teachers' attention, and the higher the learning cognitive engagement score of secondary vocational school students. Peer relationship has a significant positive influence on learning cognitive engagement of secondary vocational school students ($p < 0.1$).

H3b: School factors have a significant impact on learning behavior engagement of secondary vocational school students.

School hardware facilities, school atmosphere, teachers' teaching ability and teachers' investment have a significant positive impact on students' learning emotional engagement in secondary vocational schools ($p < 0.001$). The teacher's attention has a significant positive influence on the students' learning emotional engagement ($p < 0.01$). The peer relationship has no significant influence on the learning emotional engagement of secondary vocational school students.

H3c: School factors have a significant impact on learning behavior engagement of secondary vocational school students.

The data shows that teachers' teaching ability and attention have a significant positive impact on students' learning behavior engagement in secondary vocational schools ($p < 0.001$). School hardware facilities, school atmosphere, teacher engagement and

peer relationship have no significant impact on the learning behavior engagement of secondary vocational school students.

H4: Family economic condition factor has moderating influences on the relationship between individual, family and school and learning engagement of secondary vocational school students.

In order to further explore the moderating effect of family economic conditions on teachers' teaching ability, teachers' engagement and secondary vocational school students' learning engagement. On the basis of controlling the individual characteristics, family characteristics and school characteristics of secondary vocational school students, this study added the interaction items between the two variables in the model. The result shows that school hardware facilities, school atmosphere, teachers' teaching ability and teachers' engagement have a greater positive effect on the learning engagement of secondary vocational school students with general family economic conditions, while students with very rich family economic conditions will significantly weaken the positive impact.

Discussions and Conclusions

Based on the empirical survey of 3 districts and 3 schools in Shenzhen City, Guangdong Province, this study uses multiple linear regression technology, interactive model and other methods to study various factors that influence the learning engagement of secondary vocational school students around their learning cognitive engagement, emotional engagement and behavioral engagement. This study confirmed the following assumptions: Individual factors have a significant impact on learning cognition, behavior and emotional engagement of secondary vocational school students; Family factors have a significant impact on secondary vocational school students' learning cognition, behavior and emotional engagement; School factors have a significant impact on secondary vocational school students' learning cognition, behavior and emotional engagement. Specifically, compared with individual and family characteristics, school characteristics are important factors that affect the learning engagement of secondary vocational school students.

Individual factors have significant influence on learning engagement of secondary vocational school students.

The students who serve as class leaders have significantly higher levels of learning cognitive engagement, emotional engagement and behavioral engagement than those who do not serve as class leaders. Students who serve as class leaders usually come from the campaign. They are not only excellent in character and learning, but also have a strong sense of responsibility. In order to help the class teacher manage the class, and to be able

to play the role of example, they often study more actively and hard, which is widely recognized.

The reason why this study found that boys' learning behavior involvement score is higher may be related to the particularity of secondary vocational schools, which emphasize more hands-on practical ability and have more practical courses, which is more suitable for boys' characteristics. Relevant research also shows that traditional prejudice has caused a serious loss of women in lower vocational education.

Family factors have significant influence on learning engagement of secondary vocational school students.

From the perspective of family relations, family relations have a significant positive influence on students' learning engagement scores. The more harmonious the family relationship is, the better the family social relationship is, and the higher the level of students' learning cognition, emotion and behavior. Good family relations help secondary vocational school students have a stronger willingness to achieve their parents' expectations and requirements.

From the perspective of family economic conditions, family economic condition moderates the influence of school factors on the learning engagement of secondary vocational school students. The research result shows that the social capital and economic capital owned by families with medium economic conditions can create a good supportive development environment for children and promote their learning engagement level. This is because if the family's economic conditions and income are too high or too low, the parents of families with lower socio-economic status are more concerned about the life of the family. Therefore, it is difficult to focus on children's learning.

School factors have significant influence on learning engagement of secondary vocational school students.

After adding school factors, the standard coefficients of family factors and personal factors are decreasing, indicating that school factors have a greater impact on the learning engagement of secondary vocational school students than individual and family factors. It can be seen that compared with school hardware facilities, school atmosphere, teachers' teaching ability, teachers' engagement and teachers' attention have a relatively stronger impact on students' learning engagement.

Recommendations

1. To establish multi-dimensional evaluation index system of students, focusing on the process evaluation of secondary vocational school students.

It is necessary to build a scientific and standardized evaluation index system around the degree of learning engagement, learning status and results. The government,

social organizations and vocational colleges must work together to make their own contributions to ensure the fairness of the evaluation results. The talent training model of vocational education in the new era should focus on student development and follow the law of student ability development. Paying attention to students' learning engagement is the core standard for the high-quality development of vocational education and the improvement of talent cultivation quality. From the school level, we should supervise and manage the teaching quality from all aspects, and establish a secondary vocational school student evaluation system with equal emphasis on process and results. From the perspective of teachers, teachers should create an excellent learning environment for students.

2. To pay more attention to the vulnerable groups and increase investment comprehensively.

It is generally believed that free education is the most thorough form of education in the student funding system, which is conducive to improving the attractiveness of education. In recent years, China has issued a series of policies to strengthen the economic support for poor secondary vocational school students, but this kind of economic support is more reflected in the most basic learning and living security or competitive learning incentives. In addition, it is also very important to support students to choose their majors independently.

3. To create a good campus environment and increase the support of teachers and peers.

To build a model of industry-education integration, we will strengthen the in-depth cooperation between schools and enterprises, provide excellent learning environment and hardware facilities for secondary vocational school students to participate in learning. We also need to provide conditions for the reform of training mode, curriculum content and teaching method innovation, improve the quality of education and teaching. we must adhere to the principle of firmly adjusting measures to local conditions to create a harmonious and symbiotic campus cultural environment. As a teacher, we must realize the importance of our caring behavior to the development of secondary vocational school students. We should pay more attention to students, understand their needs, form a good relationship between teachers and friends, understand students' real ideas, help students form clear intentions for future career development and long-term goals. During the study period, secondary vocational school students often communicate with students who have little difference in their level of learning engagement, and basically do not communicate with students who have a significant difference in their level of learning. secondary vocational schools can also invite excellent alumni and enterprise craftsmen to make a report, so that students can

get close contact with excellent examples around them and further stimulate learning interest.

4. To create a harmonious family atmosphere and give full play to the supportive role of the family.

As the most important roles for children in the family, parents should recognize the importance of family education in children's growth, give more care and understanding to children, and create a warm and harmonious family atmosphere. secondary vocational school students are in a critical period of self-consciousness development, and personality traits such as independence, self-esteem and individuality are gradually revealed. In the process of carrying out family education, parents should follow communication strategies such as regular communication, respecting children's personality, encouraging expression, patient listening, tolerance of dissent, etc., through benign parent-child communication, close the parent-child distance, promote the formation of close and healthy parent-child relationship, and strengthen the learning engagement of secondary vocational school students. Parents also should communicate actively with school teachers, clarify their children's development needs and long-term plans, pay attention to their children's learning situation at school, actively cooperate with their children's learning life and learning management process, and work together at home and school to ensure that students can clarify their learning attitude, help students cultivate excellent learning habits, and improve their learning engagement.

5. Individual students should increase their learning engagement and "enhance their abilities" constantly.

It is necessary to mobilize students' learning motivation and clarify their learning attitude, so as to guide students to complete the course learning according to the established standards and norms. secondary vocational school students should prepare reasonable learning plans according to their recent learning situation, and be able to participate in learning activities according to the learning plan, which can help students develop excellent learning habits and increase investment in emotion, cognition, behavior and other aspects. Secondary vocational school students need to mobilize the idea of active learning during their study. Active learning awareness and learning habits are conducive to the development of good learning habits. On the one hand, we can mobilize students' enthusiasm for active learning; on the other hand, we can help students form the excellent habit of active learning, and optimize the education and training results of secondary vocational school students comprehensively.

Limitations and Future Research

Limited by time, manpower and cost, this study has the following limitations:

The learning engagement of secondary vocational school students may change

over time, that is to say, it is dynamic. Therefore, this study can only reflect the current situation of learning engagement of secondary vocational school students in a period of time.

Due to some objective factors, the investigation scope of this study is limited to Shenzhen, a representative city in Guangdong Province. However, it is not clear whether the factors influencing the learning engagement of secondary vocational school students in different regions are different or whether regional issues will affect the research results. In addition, there are some limitations in sample selection. In this study, students from only three schools and ten majors were selected for sampling survey according to the school's location and major distribution. Whether the conclusions can be applied to all secondary vocational school students needs to be further verified.

From the perspective of secondary vocational school students' learning engagement, this study finds out three factors affecting secondary vocational school students' learning engagement through literature review, which are mainly individual, family and school factors. The three dimensions of learning engagement are cognitive learning engagement, emotional learning engagement and behavioral learning engagement. The study verifies the relationship between these factors and dimensions. Actually, there may be many factors affecting students' learning engagement. The research conclusion of this paper only verifies the hypothesis proposed in the study, which cannot represent that the influencing factors proposed in this study are all the influencing factors on the learning involvement of secondary vocational school students.

According to the above research conclusions and limitations, the author puts forward some suggestions for future research directions for reference:

In future studies, other researchers can choose the secondary vocational schools in other regions or other types of schools and training institutions to conduct research and analysis, so as to enrich the theory and practice of students' learning engagement. This study only verified the relationship among individual, family and school factors and students' learning engagement within the scope of secondary vocational schools in Shenzhen.

In future research, other variables and other possible influencing factors can be added into the research framework, such as urban and rural background, family social relations and other factors. In addition, this paper does not make a comparative study of students' learning engagement among different grades, which can be further discussed in future studies. Due to the limitation of research ability, this study only makes a preliminary exploration and research on the relationship among individual, family and school factors and the learning engagement of secondary vocational school students. It is hoped that with the attention of the society to secondary vocational education and

the further research on the concept of student learning engagement at home and abroad, more and more excellent research results will appear.

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