

Examining the Relationship between the Integration of Industry and Education and Student Career Mental Health Development: A Case Study of First-year Enterprise Internship at Shanghai Business Accounting School

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Abstract: This study aims to evaluate the effectiveness of industry-education integration on student career development by assessing the vocational personality traits and achievement motivation levels of 994 first-year vocational students from Shanghai Business Accounting School. The MBTI (Myers-Briggs Type Indicator) career personality questionnaire and achievement motivation level questionnaire were employed to measure the outcomes of industry-education integration and provide guidance for career guidance education and enterprise internships for vocational students. The findings indicate that among the four temperament types, the largest proportion is observed among idealists, accounting for 31.3%, while empiricists have the smallest representation at 14.6% among the first-year vocational students. Regarding achievement motivation, the overall achievement motivation score of the first-year vocational students is below zero, indicating a relatively low level of achievement motivation. Specifically, both empiricists and idealists demonstrate a relatively low level of achievement motivation in terms of vocational personality traits. A follow-up assessment of achievement motivation levels was conducted after a short-term enterprise internship, revealing a significant improvement in the achievement motivation levels of the vocational students. This suggests that the dual-subject educational model under industry-education integration can effectively enhance students' vocational skills and activate their internal motivation, thereby improving their achievement motivation and overall competitiveness. By leveraging industry-education integration, the school aims to cultivate high-quality talents and address specific talent shortages in the market, ultimately achieving mutual success between talents and the market.

Keywords: Achievement motivation, Integration of industry and education, MBTI, Vocational education.

1. Introduction

Vocational education plays a significant role as an integral component of China's vocational education system, carrying the crucial function of human resource development in the context of our nation's socialist modernization. Its existence and development determine the level and progress of the entire vocational education system. In Shanghai, the integration of industry and education has been identified as a key focal point and breakthrough for enhancing the quality of higher vocational education. This integration has emerged as a top priority in vocational education reform and a crucial factor in talent cultivation in the new era. The success of industry-education integration relies on the effective alignment of students with industrial structures and the demand for skilled professionals in enterprises. This necessitates students to establish their career goals based on their individual circumstances and market demands, and to develop vocational competencies through clear career planning pathways that match the talent needs of enterprises. With this objective in mind, Shanghai Business Accounting School collaborates with professional psychological institutions to conduct empirical research, using scientifically valid psychological methods, to comprehensively analyze the occupational mental conditions and characteristics of vocational school students. The findings from this research will guide the curriculum design and practical teaching of vocational guidance for these students, as well as the

implementation of their enterprise internships.

Career psychology encompasses the relatively stable psychological tendencies and personality traits demonstrated by individuals in their occupational activities. Occupational personality is a crucial component of career psychology. Exploring occupational personality is an important aspect of self-awareness in career planning education for vocational school students. This study utilizes the MBTI (Myers-Briggs Type Indicator) vocational personality questionnaire to objectively understand students' occupational personality characteristics through standardized measures. It aims to provide personalized career development plans that are tailored to students' individual circumstances. Additionally, individual vocational orientations are influenced by internal motivational factors. Achievement motivation is the drive for individuals to pursue meaningful and valuable work and strive for a state of excellence. For vocational school students, achievement motivation is a significant factor influencing their academic achievements, which directly impacts their academic engagement and workplace performance. Therefore, it is necessary to comprehensively assess vocational school students' levels of achievement motivation and provide data-based interventions to stimulate their learning motivation and potential, thereby laying a foundation for achieving their career goals.

In summary, this study aims to utilize scientific and effective psychological measurement tools, based on relevant psychological theories, and adopt a quantitative research

approach to analyze the relationship between vocational personality types (as assessed by the MBTI) and achievement motivation among vocational school students. It will also examine the distributional differences of demographic variables in vocational personality and achievement motivation. The comprehensive analysis of vocational personality types and the summary of achievement motivation among vocational school students will provide a solid research foundation for improving career guidance programs for these students and facilitating their successful completion of short-term enterprise internships.

2. Research Sample and Methods

2.1. Research Sample

In this study, a questionnaire survey was conducted on first-year vocational school students from Shanghai Business Accounting School using an online assessment system. The sampling method employed was cluster sampling. Invalid questionnaires with incomplete responses or excessively short completion times were excluded from the analysis. A total of 690 valid questionnaires were collected, consisting of 631 males (accounting for 91.4%) and 59 females (accounting for 8.6%). The average age of the participants was 16.27±0.60 years.

2.2. Research Methods

2.2.1. Vocational Personality

The Myers-Briggs Type Indicator (MBTI) questionnaire was utilized to assess the vocational personality of the vocational school students. The MBTI questionnaire consists of a total of 93 items, with 21, 26, 24, and 22 items in the E-I, S-N, T-F, and J-P dimensions, respectively. Higher scores indicate a stronger preference for the corresponding dimension. Specifically, the MBTI personality type theory categorizes individuals into sixteen personality types, based on four dimensions. Each dimension represents a pair of opposing preferences. The "Extraversion (E) - Introversion (I)" dimension refers to the direction of expressing and gaining psychological energy. The "Sensing (S) - Intuition (N)" dimension represents the way individuals gather information. The "Feeling (F) - Thinking (T)" dimension reflects the internal struggle individuals focus on when making decisions. The "Judging (J) - Perceiving (P)" dimension represents how individuals adapt to the external environment in a planned or spontaneous manner and is a comprehensive reflection of information gathering and decision-making preferences in an individual's lifestyle.

2.2.2. Achievement Motivation

The Chinese version of the Achievement Motivation Scale (AMS), translated and adapted by Chinese psychologists Ye Renmin and Hegtvet, was employed to measure achievement motivation. The scale consists of 30 items, assessing two dimensions: "need for achievement (Ms)" and "fear of failure (Mf)." Participants rated each item on a 1 (completely inconsistent) to 4 (completely consistent) scale. The achievement motivation score (Ma) was calculated by subtracting the Mf score from the Ms score, with higher scores indicating stronger achievement motivation.

2.2.3. Data Analysis

The data analysis was conducted using SPSS 26.0 software. Several statistical methods were employed to analyze the data.

To test for common method bias, the Harman's single-factor test will be conducted to examine the presence of

collinearity issues among the variables. Descriptive statistics will be used to analyze the overall characteristics of the demographic variables and research variables.

To compare the differences in achievement motivation scores among different demographic variables and vocational personality types, the chi-square test will be utilized.

3. Findings

3.1. MBTI Occupational Personality Type Characteristics of First-year Secondary Vocational Students

The descriptive statistical results of MBTI temperament types of first-year secondary vocational students are shown in Table 1. It can be seen from Table 1 that among the group of first-year secondary vocational students, the idealist temperament type accounts for the largest proportion, reaching 31.3%, and the empiricist temperament type accounts for the smallest proportion, reaching 14.6%. It can be seen from Table 2 that among the eight personality types, exploratory students accounted for the largest proportion of 19.9%, and reactive students accounted for the smallest proportion of 5.9%.

Table 1. MBTI Temperament Types of Secondary Vocational Students (n=690)

Type	N	Percentage
Traditionalists	170	24.6%
Conceptualists	203	29.4%
Empiricists	101	14.6%
Idealists	216	31.3%

Table 2. MBTI Personality Types of Secondary Vocational Students (n=690)

Type	N	Percentage	Type	N	Percentage
ISTJ	88	12.8%	ISFP	103	14.9%
ISFJ			INFP		
ESTJ	106	15.4%	INTJ	60	8.7%
ENTJ			INFJ		
ISTP	90	13.0%	ESFP	41	5.9%
INTP			ESTP		
ENFP	137	19.9%	ESFJ	65	9.4%
ENTP			ENFJ		

3.2. Characteristics of Achievement Motivation Level of First-year Secondary Vocational Students

The characteristics of achievement motivation levels among first-year vocational students can be described based on the descriptive statistics presented in Table 3 and Table 4.

According to Table 3, the average score for achievement motivation among first-year vocational students is -0.53, which is below the critical value of 0, indicating that the overall level of achievement motivation is relatively low.

Furthermore, as shown in Table 4, compared to male students, female students have significantly lower achievement motivation scores ($p < 0.05$).

Table 3. Achievement Motivation Level of Secondary Vocational Students(n=690)

Type	Min	Max	Mean	SD
Pursuit of Success	18.00	60.00	39.07	6.77
Avoid Failure	15.00	60.00	39.59	7.89
Achievement Motivation	-35.00	39.00	-0.53	12.21

Table 4. Differences in Achievement Motivation Scores of Secondary Vocational Students by Gender(n=690)

Variable	Man	Woman	t
Pursuit of Success	39.11	38.61	1.02*
Avoid Failure	39.52	40.39	-1.13*
Achievement Motivation	-0.41	-1.78	-1.58*

3.3. The Relationship Between MBTI Occupational Personality and Achievement Motivation Level of First-year Secondary Vocational Students

The achievement motivation scores of first-year secondary vocational students with different temperament types are compared, and the results are shown in Table 5. It can be seen from Table 5 that conceptualists have the highest achievement motivation scores and empiricists have the lowest

achievement motivation scores.

In order to further compare the differences in achievement motivation scores of vocational students with four temperament types, LSD post-hoc test was used to conduct multiple comparisons. It can be seen from Table 6 that the achievement motivation score of conceptualists is significantly higher than that of idealists and empiricists ($p < 0.01$), and the achievement motivation score of traditionalists is significantly higher than that of idealists and empiricists ($p < 0.05$).

Table 5. Differences in Achievement Motivation Scores of First-year Secondary Vocational Students with Different Temperament Types(n=690)

Type	Pursuit of Success	Avoid Failure	Achievement Motivation
Traditionalist	39.75	39.59	0.16
Conceptualist	39.50	37.81	1.69
Empiricist	38.85	40.97	-2.62
Idealist	38.45	40.62	-2.17

Table 6. Multiple Comparison Results of Achievement Scores on Students with Different Temperament Types(n=690)

Type	Temperament (I)	M±SD	Temperament(J)	M±SD	Mean Difference (I-J)	p	95% confidence interval	
							lower limit	upper limit
Achievement Motivation	Concept	1.69 ± 2.38	Ideal	-2.17 ± 4.34	3.86	**	1.53	6.18
			Experience	-2.62 ± 3.38	4.31	**	1.42	7.21
			Tradition	0.16 ± 2.59	1.53	0.23	-0.94	4.00
	Ideal	-2.17 ± 4.34	Experience	-2.62 ± 3.38	0.47	0.75	-2.41	3.32
			Tradition	0.16 ± 2.59	-2.32	*	-4.76	-0.02
			Experience	-2.62 ± 3.38	0.16 ± 2.59	-2.78	*	-5.77

4. Conclusion

Among the four types of temperament, idealists have the largest number, accounting for 31.3%. Idealist types are more interested in the meaning, relationship, and possibility of things. At the same time, the unbalanced physical and psychological development of individuals in adolescence also leads to emotional instability of secondary vocational students, weak awareness and ability of emotional control, and more emotional. Therefore, the professional personality of secondary vocational students shows the tendency to pursue independent innovation, change and challenge. The results of the measurement of the achievement motivation of the first-year secondary vocational students show that the achievement motivation score of the secondary vocational students is less than 0 points, which indicates that the achievement motivation level of the first-year secondary

vocational students is at a low level as a whole. For secondary vocational students, although secondary vocational education is a continuation of high school education, it reflects the denial of self-study and the inferiority caused by relative weakness, which will also make secondary vocational students confused in their studies. Individuals with low achievement motivation also have a low sense of self-worth. The primary goal of their behavior is not to solve problems or achieve self-growth, but to avoid the loss of self-esteem and negative emotions caused by failure, which makes them face difficulties or When faced with challenging problems, they tend to avoid rather than solve problems head-on, which limits their self-growth and makes them unable to fully develop their potential and advantages.

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