The Mechanism of the Relationship Between Online Training Learning Motivation and Learning Effect of Teachers in Secondary Vocational Colleges, CHINA

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Abstract

Secondary vocational education belongs to the core content of vocational education. This study was set up in objectives of study to search for the relationship between online training learning motivation and learning effect of teachers in secondary vocational college in China. Based on 406 online secondary vocational teachers online training data analysis found that the online teaching learners knowledge background, learning motivation and learning effect has significant correlation between teachers learning motivation for online training learning effect has significant positive influence, learning investment in learning motivation and partial mediation between the learning effect. Accordingly, in online teaching, it is necessary to build a systematic teacher support system, optimize the external environment of online training and learning, design a variety of online training incentive strategies, improve learners' self-efficacy, carry out rich interactive activities, and promote the transformation of secondary vocational teacher support into internal motivation of learning.

Keywords: Online training; Learning motivation; Learning effect; Vocational colleges

Introduction

The online training of secondary vocational teachers carries the sacred mission of high-quality development of teacher training in secondary vocational colleges, and is committed to the requirements of building a networked, digital, personalized and lifelong education system. By the end of 2020, according to 11,300 vocational schools, and 849,500 full-time teachers in secondary vocational schools. Education many scholars in the traditional education training mode training limited

Received: 2023-07-02 **Revised:** 2023-07-17 **Accepted:** 2023-07-21

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time and space, training resources, training content homogeneity, training way, not according to select training content ills, on the basis of "Internet + education" training mode launched a new exploration and attempt, to promote the development of vocational education high quality provides a solid system guarantee, points out the direction.

C.Wittrock, the professor of the University of California has made an in-depth analysis and explanation of the generation process of understanding. He believes that learning is the process of learners generating information, and the generation of meaning is realized through the interaction between the original cognitive structure and the sensory information received from the environment. Taylor defines the assessment process as essentially a process that determines the degree to which the curriculum and syllabus actually reach the educational goals. From Hope Theory Review, the Hope Theory was reviewed by Yale University professor Victor Frew in 1964. Expectation theory reflects that the psychological mechanism of human behavior is an effective tool to analyze the incentive power of measures and goals.

Research Objectives

To study the relationship between learning motivation and learning effect of secondary vocational teachers.

To search the relationship between the learning motivation and the learning investment of the secondary vocational teachers.

To explore the influence path between learning motivation and learning effect.

Conceptual Framework

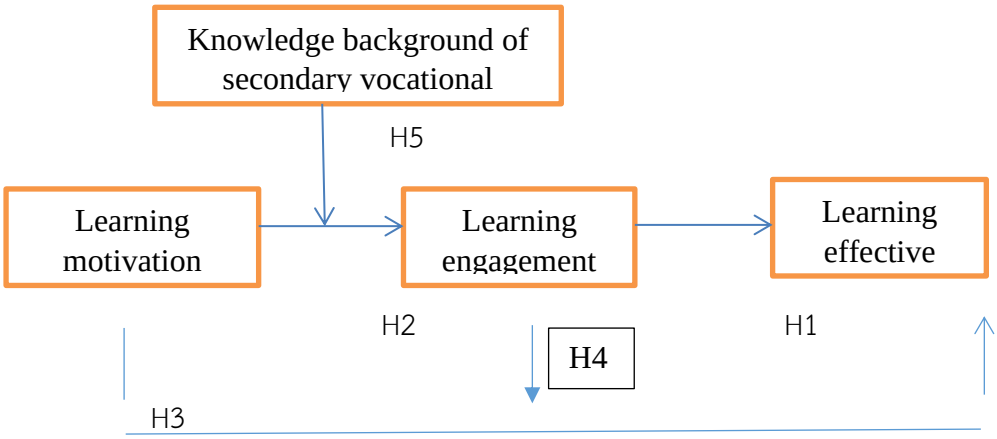

Figure1 Conceptual framework from original research

This study assumes that online training learning motivation of secondary vocational teachers has a positive effect on learning effect, learning motivation has a positive effect on learning input, and learning input plays a mediating role between learning motivation and learning effect.

The specific assumptions are described as follows:

H1: Learning motivation has a positive impact on Learning engagement.

H2: Learning engagement has a positive impact on Learning effective.

H3: Learning motivation has a positive impact on Learning effective.

H4: Learning engagement plays a mediating role between Learning motivation and Learning effective.

H5: The knowledge background plays a regulatory role between Learning motivation and Learning engagement.

Research Method

This paper mainly adopts literature research and questionnaire survey, based on the online training learning motivation and learning effect of secondary vocational teachers, to explore learning strategies, improve the enthusiasm of learners, actively participate and focus, stimulate strong learning motivation, generate positive learning behavior, and optimize the online training learning process. Using multiple linear

regression technology, three assumptions are proposed based on the learning motivation, learning input and learning effect of online training for middle school vocational teachers, and the relationship mechanism between learning motivation and learning effect of online training for middle school vocational teachers is discussed.

The Likert scale setting was measured using five options from "complete nonfit" to "full fit", with a score of 1 to 5. Through the questionnaire star APP, 130 pre-test papers were issued and collected, and secondary vocational teachers living in Rizhao, Shandong Province were selected as the research objects. Because Rizhao can represent the level of secondary vocational education in most small and medium-sized cities in China, the respondents are limited to teachers in secondary vocational colleges and managers who organize online training. A total of 465 questionnaires were issued, 59 invalid questionnaires were excluded, and 406 valid questionnaires were recovered.

Data Analysis

This chapter mainly studies hypothesis testing. On the basis of questionnaire recovery, descriptive statistics, reliability validity test and correlation analysis were performed using SPSS23.00 and AMOS, and the hypotheses were tested using regression analysis.

Descriptive analysis of sample characteristics in this study, the frequency statistics of the gender, education background, course type, learning platform and professional title of the respondents in the basic data were made, and each option was a percentage of the total sample. The results are shown in Table 1. It can be seen that the gender is relatively balanced, the degree is mainly undergraduate, the course types of economics / management / education / law are mainly other, and the professional titles are mainly lecturers.

Table 1: Description of the distribution of the sample characteristics

Variable	Option	Frequency	Percentage
Gender	A. male	171	42.12%
	B. Female	235	57.88%
Educational background	A. Junior college and below	18	4.43%
	B. Junior college	68	16.75%
	C. Undergraduate college	185	45.57%
	D. Master Degree Candidate	112	27.59%
	E. Doctoral candidate	23	5.67%
Curriculum type	A. Humanities/Social Sciences/Arts	107	26.35%
	B. Computer/Mathematics/Physics/ Chemistry class	58	14.29%
	C. Medical/ Health category	7	1.72%
	D. Economics/Management/Education/ Law category	164	40.39%
	E. Other	70	17.24%
Study terrace	A. For points easy/Xuetang online	55	13.55%
	B. Easy to learn	51	12.56%
	C. Super star learning	124	30.54%
	D. e-Class/open2study	8	1.97%
	E. Other	168	35.22%
	A. Professor	28	6.90%

Academic	B. Adjunct professor	59	14.53%
title	C. Lecturer	165	40.64%
	D. Tutor	73	17.98%
	E. Other	81	19.95%

According to the confirmatory factor analysis of the Learning motivation Scale, the results of the CFA model fit test of the learning motivation scale show that the CFA model of learning motivation has good fit and good differential validity among all dimensions. Using the confirmatory factor of the learning effect scale to analyze the CFA model adaptation test of the learning effect scale, the comprehensive analysis results can show that the CFA model of the learning effect has good adaptation, and comprehensively shows that all dimensions have good convergent validity and combination reliability.

In this analysis, an exploratory analysis of the correlation between each variable was conducted through Pearson correlation analysis. According to the results in Table 5, it can be seen that there were significant correlation between each variable in this analysis, and they were all significant at the 99% significance level. According to the results of the correlation coefficient, it can be seen that the correlation coefficient r between each variable is greater than 0, so the synthesis can indicate that each variable is significant in this analysis.

Table 2. Results of the Pearson correlation analysis between the various dimensions

Dimension	1	2	3	4	5	6	7	8	9
Consciousness_m	1								
emotion_m	.641**	1							
action_m	.628**	.662**	1						

action_e	.588**	.576**	.578**	1					
policy_e	.565**	.610**	.608**	.218**	1				
application_e	.641**	.616**	.620**	.283**	.254**	1			
emotion_i	.480**	.526**	.566**	.452**	.396**	.464**	1		
cognitice_i	.616**	.616**	.603**	.453**	.571**	.519**	.177**	1	
behavior_i	.670**	.638**	.640**	.515**	.519**	.554**	.207**	.412**	1

**. At the 0.01 level (two-tailed), the correlation was significant.

Regression analysis of the effect of learning motivation on learning effects.

Regression analysis was used to study the effects of learning motivation on behavior, policy and application aspects separately. As shown in Table 3, Table 4 and Table 5, the regression models with r squares of 0.448,0.472 and 0.518, respectively, and adjusted r squares of 0.437,0.461 and 0.509, respectively, were well fitted and most of the variables explained could be well explained by the model. The observed values for the F-test statistic were 40.319,44.322 and 53.413, corresponding to all probability p-values of 0.000. Based on the results of this table, significance tests can be performed on the regression equations. A linear model was built with a p-value of less than 0.05. The regression coefficient results indicate that the value of VIF is less than 5, indicating no multicollinearity between independent variables. In Table 3, the regression coefficient for the dependent variable, consciousness, emotion and behavior as independent variables were 0.251,0.216, and 0.225, respectively, and all were significant, indicating a significant positive effect of learning motivation on behavior. So, assume that H1-1 is true.

Table 3 Regression analysis of the effect of learning motivation on behavior

Variable	B	Standard error	t	Conspicuousness	VIF
consciousness_m	0.251	0.047	5.309	0.000	1.975
emotion_m	0.216	0.052	4.169	0.000	2.151
action_m	0.225	0.049	4.566	0.000	2.051
gender	0.066	0.073	0.903	0.367	1.074
educational background	-0.045	0.042	-1.073	0.284	1.196
the type of course	-0.020	0.024	-0.837	0.403	1.060
Learning platform	0.017	0.024	0.683	0.495	1.054
academic title	-0.047	0.032	-1.448	0.148	1.134
(constant)	1.405	0.271	5.178	0.000	
R square	0.448				
Adjusted R square	0.437				
F	40.319***				

* p<0.05 , ** p<0.01, *** p<0.001

In Table 4, the regression coefficients for consciousness for which the policy effect was the dependent variable, emotion and behavior were independent variables were 0.202,0.319 and 0.301, respectively, and all were significant, indicating a significant positive effect of learning motivation on policy aspects. So, assume that H1-2 holds true.

Table 4 Regression analysis of learning motivation on policy effects

Variable	B	standard error	t	conspicuousness	VIF
consciousness_m	0.202	0.051	3.978	0.000	1.975
emotion_m	0.319	0.056	5.737	0.000	2.151
action_m	0.301	0.053	5.679	0.000	2.051
gender	-0.073	0.078	-0.938	0.349	1.074
educational background	0.077	0.045	1.720	0.086	1.196
the type of course	-0.002	0.025	-0.064	0.949	1.060
Learning platform	-0.010	0.026	-0.365	0.715	1.054
academic title	-0.006	0.035	-0.187	0.852	1.134
(constant)	0.856	0.291	2.941	0.003	
R square	0.472				
Adjusted R square	0.461				
F	44.322***				

* p<0.05 , ** p<0.01, *** p<0.001

In Table 5, the regression coefficients of the applied effect as dependent variable and consciousness, emotion and behavior as independent variables were 0.321,0.235 and 0.255, respectively, and all were significant, indicating a significant positive effect of learning motivation on the application. So, assume that H1-3 is true.

Table 5 Regression analysis of learning motivation on the effect of application

Variable	B	standard error	t	conspicuousness	VIF
consciousness_m	0.321	0.047	6.783	0.000	1.975
emotion_m	0.235	0.052	4.539	0.000	2.151
action_m	0.255	0.049	5.179	0.000	2.051
gender	-0.016	0.073	-0.227	0.821	1.074
educational background	0.025	0.042	0.611	0.542	1.196
the type of course	-0.004	0.024	-0.151	0.880	1.060
Learning platform	-0.028	0.024	-1.142	0.254	1.054
academic title	0.030	0.032	0.934	0.351	1.134
(constant)	0.877	0.271	3.236	0.001	
R square	0.518				
Adjusted R square	0.509				
F	53.413***				

* p<0.05 , ** p<0.01, *** p<0.001

Effect of learning motivation on learning engagement. Regression analysis was used to examine the effects of learning motivation on emotional, cognitive and behavioral engagement. As shown in Table 6, Table 7 and Table 8, the regression models with r squares of 0.377,0.503 and 0.560, respectively, and adjusted r squares of 0.364,0.493 and 0.552, respectively, were well fitted and most of the variables explained could be well explained by the model. The observed values for the F test statistics were 29.984,50.131 and 63.263, corresponding to all probability p-values of 0.000. Based on the results of this table, significance tests can be performed on the regression equations. A linear model was built with a p-value of less than 0.05. The regression coefficient results indicate that the value of VIF is less than 5, indicating no multicollinearity between independent variables.

The regression coefficients for emotional engagement as the dependent variable, consciousness, emotion and behavior as independent variables were 0.112,0.216, and 0.327, respectively, and all were significant, indicating a significant positive effect of learning motivation on affective engagement. So, assume that H2-1 is true.

Table 6 Regression analysis of learning motivation on affective engagement

Variable	B	standard error	t	conspicuousness	VIF
consciousness_m	0.112	0.052	2.129	0.034	1.975
emotion_m	0.216	0.057	3.780	0.000	2.151
action_m	0.327	0.055	6.002	0.000	2.051
gender	0.083	0.081	1.030	0.304	1.074
educational background	-0.019	0.046	-0.408	0.683	1.196
the type of course	0.037	0.026	1.423	0.155	1.060

Learning platform	0.022	0.027	0.829	0.407	1.054
academic title	-0.018	0.036	-0.507	0.612	1.134
(constant)	0.672	0.300	2.238	0.026	
R square	0.377				
Adjusted R square	0.364				
F	29.984***				

* p<0.05 , ** p<0.01, *** p<0.001

In Table 7, the regression coefficients for cognitive input as dependent variable, consciousness, emotion and behavior as independent variables were 0.293,0.285 and 0.237, respectively, and all were significant, indicating a significant positive effect of learning motivation on cognitive input. So, assume that H2-2 holds true.

Table 7 Regression analysis of learning motivation on cognitive engagement

variable	B	standard error	t	conspicuousness	VIF
consciousness_m	0.293	0.049	6.012	0.000	1.975
emotion_m	0.285	0.053	5.354	0.000	2.151
action_m	0.237	0.051	4.665	0.000	2.051
gender	0.060	0.075	0.807	0.420	1.074
educational background	0.082	0.043	1.910	0.057	1.196

the type of course	-0.038	0.024	-1.567	0.118	1.060
Learning platform	-0.024	0.025	-0.972	0.332	1.054
academic title	-0.012	0.033	-0.358	0.720	1.134
(constant)	0.274	0.279	0.981	0.327	
R square	0.503				
Adjusted R square	0.493				
F	50.131***				

* p<0.05 , ** p<0.01, *** p<0.001

In Table 8, the regression coefficients for behavioral input as the dependent variable, consciousness, emotion and behavior as independent variables were 0.341,0.246, and 0.256, respectively, and all were significant, indicating a significant positive effect of learning motivation on behavioral input. So, assume that H2-3 is true.

Table 8 Regression analysis of learning motivation on behavioral engagement

Variable	B	Standard error	t	Conspicuousness	VIF
consciousness_m	0.341	0.045	7.610	0.000	1.975
emotion_m	0.246	0.049	5.016	0.000	2.151
action_m	0.256	0.047	5.488	0.000	2.051
gender	-0.086	0.069	-1.241	0.215	1.074

educational background	0.002	0.039	0.053	0.958	1.196
the type of course	-0.028	0.022	-1.260	0.208	1.060
Learning platform	-0.013	0.023	-0.553	0.580	1.054
academic title	-0.013	0.031	-0.410	0.682	1.134
(constant)	0.625	0.257	2.433	0.015	
R square	0.560				
Adjusted R square	0.552				
F	63.263***				

* p<0.05 , ** p<0.01, *** p<0.001

Analysis of the mediating effect of learning input on learning motivation and learning effect.

The commonly used method for mediation utility testing is the causal method proposed by Baron and Frilz (Baron, R.M. & Kenny,D.A.,1986) believe that its statistical power is low, so it is often complemented by Sobel tests. However, the Sobel test is also flawed, which requires assuming that the sample distribution of indirect effects is normally distributed. Therefore, Mc Kinnom (Mckinnom, L.R. and Kaul, R., 2012) recommends the bootstrap approach. This study used the bootstrap method in PROCESS in the SPSS software. Set the bootstrap sample size to 5000 and mediation effects were tested per Hayes recommendations. The corresponding indirect, direct, or total effects exist if the bootstrap confidence interval does not contain 0, according to Preacher Z .

To test whether learning engagement mediates the effect of learning motivation on learning effects, the results are shown in Table 9.

Table 9. Results of the mediation tests

	Effect	se	t	p	Level of confidence（95%）	
					LLCI	ULCI
Total effect	0.775	0.010	79.001	0.000	0.756	0.794
Direct effect	0.355	0.022	15.979	0.000	0.311	0.398
Indirect effect	0.420	0.024			0.376	0.469

Research Results

As can be seen from the bootstrap's mediation effect test in the above table, when the learning investment is the mediation variable, The indirect effect of learning motivation on the learning effect was 0.420, The confidence interval at the 95% confidence level was [0.376, 0.469], Excluding the 0, It testing significant indirect effects; The direct effect was 0.355, Confidence interval at the 95% confidence level is [0.311, 0.398], Excluding the 0, It shows that the direct effect is significant; The total effect was 0.775, Confidence interval at the 95% confidence level was [0.756, 0.794], Excluding the 0, Suggesting that the total effect exists. Therefore, learning investment plays a partial mediating role between learning motivation and learning effect. So, assume that H4 holds. By summarizing the results of the research hypothesis test, each hypothesis is established, and the research sample can be expanded to make the research more representative. In addition, it is necessary to deepen the research content, explore the real problems, and analyze the influencing factors and causes further, so as to put forward more scientific, objective, targeted and operable solution

strategies. The level of teachers' ability determines the level of school education quality.

Discussion

1. Online training of secondary vocational teachers has good learning motivation. On the basis of sufficient learning investment, online training of secondary vocational teachers can achieve learning effect. The good learning effect of their participation in online training can promote the development of domestic secondary vocational education, guiding the direction for the future of vocational education. According to the research results, the online training learning motivation of secondary vocational teachers is a behavioral factor that directly affects the learning effect. Therefore, it is very important to create and strengthen the online training learning motivation of secondary vocational teachers. In the future, the online training of secondary vocational colleges should continue to build a bridge between vocational education and digital training and increase investment, so that secondary vocational teachers can gain a sense of honor and mission from online training. Therefore, it is necessary to strengthen the implementation of the learning motivation of online training for secondary vocational teachers and increase the intensity of learning investment.

2. According to the data analysis, learning investment, as one of the intermediary factors, is an important psychological factor affecting the learning motivation and behavior willingness of secondary vocational teachers. American scholar Colenbach believes: " Educational evaluation is a process of collecting, sorting out and providing the outcome information on the status, functions, achievements and results of all parts of participating educational activities, so as to obtain the decision-making information of educational activities." However, whether increasing the investment in online training for secondary vocational teachers can continue to bring incentive expectations and learning experience to secondary vocational school teachers will largely determine the development trend of online training for secondary vocational education in the future.

3. Avoid the empirical research results, it can be found that learning motivation and learning input will influence their online training behavior through psychological factors, and learning effect is the sub-factor with the highest influence. Translational Learning Theory was taught by the American Adult Education Scholar

and Columbia Teachers College Professor Jack Mezirow (Mezirow, J.,1978), proposed in 1978, he believed that learning is a kind of transformation, transformation is the change of view and the occurrence of the real learning process. According to the research results, the quality and transformation effect of online training of secondary vocational teachers are the most important. Secondary vocational teachers have higher requirements for "training content", "audio-visual technology", "training expert selection" and "training platform". In the future, the new digital changes of online vocational education training in China, that is, the unity of individual value and macro consciousness, should be reflected to promote social development.

Suggestion

1. Vocational education is an important pillar to realize industrialization and modernization, and it is an important bridge to transform human advantage into intellectual advantage and intellectual advantage into real productive forces.

2. Due to the particularity of educational objects and educational content, secondary vocational teachers are faced with higher requirements from the society than teachers in other stages. The rapid development of the society requires the rapid.

3. Therefore, the most important thing for secondary vocational schools is to carry out more online training for teachers, and the whole society truly provides ideas and programs for online training for secondary vocational teachers and evaluate online training.

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