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The relationship between learning motivation and learning engagement of Chinese state-funded normal university students: The mediating role of professional identity

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Abstract

This study focuses on the relationship between learning motivation, career identity, and learning engagement of state-funded normal university students in Guangdong Province, China. Through intentional sampling, 1449 state-funded normal university students from 10 universities in the Guangdong Province of China were taken as the research objects. Then, reliability and validity analysis, descriptive statistical analysis, difference analysis, correlation analysis, regression analysis, structural equation analysis, the interview method, and other statistical methods are used for analysis. There is a significant positive correlation between learning motivation, professional identity, and learning engagement of state-funded normal university students, and professional identity plays an intermediary role. The results show that the learning motivation of state-funded normal university students has a significant positive effect on professional identity and learning engagement. Furthermore, the professional identity of state-funded normal university students has a significant positive effect on learning engagement; meanwhile, professional identity serves as a partial mediator between learning motivation and learning engagement of state-funded normal university students. Due to the insufficient research level of researchers, there are limited study samples, limited study variables, and limited research methods. This study will improve the quality of education and teaching, stimulate teachers' career development potential, and promote education reform and development. It also fills the research gap, deepens the study theory of learning motivation, and optimize the training mode of state-funded normal university students.

Keywords: Chinese state-funded normal university students, Learning engagement, Learning motivation, Professional identity.

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1. Introduction

Six normal universities that fall under the direct jurisdiction of the Ministry of Education on the mainland China started enforcing the free education policy for normal students in May 2007. The introduction of this policy will help improve the quality and quantity of educational personnel and alleviate the shortage of basic education hardware facilities and educational resources, especially teachers [1]. China established a state-funded education policy for regular university students in 2018. "Free normal university students" in the education policy were altered to "state-funded normal university students." Many normal universities in Guangdong have also implemented China's national education policy and begun to recruit state-funded normal university students [2]. State-funded normal university students take on the important task of making up for the imbalance of educational resources and the shortage of basic education in rural areas. This study investigates the learning level of undergraduates who receive state funding. The purpose is to provide training units with a comprehensive understanding of the learning situation of state-funded normal university students. The findings will help promote adjustments in the work of government, schools, and other important entities, to enhance the quality of training for state-funded normal university students. The ultimate goal is to cultivate teachers in the field of basic education. Therefore, examining the learning input and motivation of state-funded regular university students has significant theoretical and practical implications.

2. Students from State-Funded Normal Universities in China

State-funded normal university students usually refer to students who are studying in the normal majors of colleges or technical secondary schools or who have graduated. Their major is education. Meanwhile, their goal is to engage in education, to teach in schools of all levels and types or other educational institutions, and to become a reserve talent for teachers.

Free education normal university students are those who apply to one of the six normal universities that fall under the direct jurisdiction of the Chinese Ministry of Education and receive free teacher education on a selective basis. During their time in school, these students are not required to pay tuition or dorm fees, and they are also given living expenses. The central government directly provides and controls the expenses needed during this time. The Ministry of Education announced in August 2018 the creation of a public education policy for normal university students. The state-funded normal university students are further divided into state-funded normal university students in the ministry-affiliated colleges and provincial colleges. According to the state's level of economic development and budgetary position, the subsidy standard for the living expenses of state-funded regular university students in ministries and universities shall be suitably adjusted. After graduating, students must continue their education for at least six years in the basic and secondary schools in their province of residence. The provincial finance department pays the tuition and living expenses for state-funded regular university students attending provincial colleges and universities, and a certain living allowance and training management system are given to students to perform relevant obligations according to the agreement. Generally, they need to teach at the grassroots level in rural areas for six years or more [3].

The state-funded normal university students referred to in this research refer to the undergraduate teachers who majored in schools supported by the provincial-level normal education policy for normal students in Guangdong Province and fulfill relevant obligations. This group of students enjoys "National preferential policies," illustrating "free tuition, living allowances, and employment arrangements."

3. Learning Motivation, Professional Identity and Learning Engagement

3.1. Concept Definition

3.1.1. Learning Motivation

Regarding the definition of learning motivation, there are many definitions of learning motivation in domestic and foreign research. Boshier [4] analyzed the motivation of adult course participants in New Zealand and divided them into two categories: "lack of motivation" and "growth motivation". Following an examination of learning motivation both domestically and internationally, some academics concur that learning motivation refers to the arbitrary purpose of students' learning activities, the motivation of learning activities, and an internal impetus to students' learning activities [5]. In this study, the term "learning motivation" refers to the psychological force that results from the combined effects of numerous factors on students' learning processes and serves as the catalyst for learning.

3.1.2. Professional Identity

When it comes to the definition of professional identity, teachers' perceptions of their identities as professionals are their perceptions of themselves as educators, depending on how they interpret events and engage with them. Professional identity was succinctly described as the notion of professional identity by Paterson, et al. [6]. According to Ewan [7], a professional identity is "a self-image that permits a sense of personal sufficiency and fulfillment in the performance of expected roles." Yi [8] believes that professional identity refers to a sense of identity and responsibility formed by a person in a certain occupation and the acceptance and recognition of the attitude, values, knowledge, beliefs, and skills of the occupation. The definition of professional identity in this study includes selecting teaching as one's first career option, acknowledging the educational knowledge and skill mastery necessary for the teaching profession in the educational process, and evaluating the higher level of the teaching profession.

3.1.3. Learning Engagement

Regarding the definition of learning input, Kuh [9] believes that learning engagement is the central factor in testing the quality of education. In addition, Li and Huang [10] believe that learning engagement can also have other distinguishing

dimensions, such as motivation, energy, and concentration [10]. The definition of learning engagement in this study is that state-funded normal university students are full of positive emotions for learning performance, including the main basic characteristics such as behavior, cognition, and emotion.

3.2. The Relationship between Learning Motivation and Learning Engagement

The Motivation and Engagement Wheel, which is the most comprehensive theoretical model, is a framework used to represent students' learning motivation and engagement, according to research by [Evans and Boucher \[11\]](#). The Motivation and Engagement Wheel framework provides an integrated perspective to understand students' learning engagement. Teachers and schools can use this framework to understand students' learning motivation, cognitive level, behavior, and emotional state so as to adopt corresponding strategies and methods to promote students' learning engagement and academic achievement. The model includes four dimensions, which include maladaptive cognition, maladaptive behavior, and adaptive cognition. Self-efficacy and motivation in adaptive cognition are two of them, and both have a favorable effect on the adaptive behavior of learning investment [12].

In conclusion, learning motivation and learning engagement are interconnected, and a variety of factors affect both of these variables. Through intervention techniques, learning engagement and motivation can be increased. Based on the research that has already been done on learning motivation and learning engagement. Although it is well known that higher levels of learning engagement are utilized as a predictive variable, this study's analysis of the relationship between learning motivation and learning engagement is significant since higher levels of learning engagement will come from higher levels of learning motivation.

3.3. The Relationship between Learning Motivation and Professional Identity

According to research by [Wasityastuti, et al. \[13\]](#), both internal and extrinsic motivation are positively connected with professional identity. Motivation is crucial in determining a learner's level of energy and activity, directing them towards specific objectives, and boosting their plans and resolve for particular tasks, all of which have an impact on the effort put into learning and the cognitive process. According to [Kusurkar, et al. \[14\]](#), students' high levels of learning motivation are not only a form of "capital" to attain good academic results but also a predictor of ongoing professional development. Researchers [Wei, et al. \[15\]](#) discovered that students with various professional identity types have varied learning motivations. For instance, students who are very engaged in their learning have the highest levels of learning motivation, whereas students who are interested in their studies and those who value utilitarianism throughout their studies fall somewhere in the middle. Students who put off studying are the least motivated to learn.

There is an interaction between identification and motivation. On the one hand, identification has an important influence on the formation of motivation; on the other hand, motivation also shapes identification. Therefore, when studying professional identity and learning motivation, the interaction between them needs to be taken into account. Learning motivation and professional identity are intricately entwined and influence one another. The urge to learn is higher the stronger the professional identity. Therefore, educators should focus on students' professional identities during the teaching and learning processes and encourage students' learning motivation by strengthening students' identities.

3.4. The Relationship between Professional Identity and Learning Engagement

Another crucial area of research focuses on the connection between learner engagement and professional identity. According to [Ma, et al. \[16\]](#), teachers' professional identities have a considerable beneficial influence on the eagerness and involvement of typical university students in their studies. [Tan and Liu \[17\]](#) found that the stronger the sense of identity of normal university students towards the teaching profession, the easier it is to be full of enthusiasm and passion for education, and the higher their learning engagement and learning satisfaction. These studies have shown how closely professional identity and learning engagement are related, how well professional identification can predict levels of learning engagement, and how professional identity has different effects on learning engagement. Professional identity shapes learning cognition and behavior, which benefits their learning engagement. Therefore, it is necessary to consider and understand, from the standpoint of professional identity, students' engagement in their learning.

4. Research Hypothesis

In existing research at home and abroad, there is research on the connection between learning engagement and motivation, between learning motivation and professional identity, and between professional identity and learning engagement, as well as the mediating role of professional identity in learning motivation and learning engagement. There are many studies where most of the research groups are ordinary university students, and there are few pieces of research on the special group of state-funded normal university students. State-funded normal university students are part of the university student group and a special part of the normal university student group.

Based on the above analysis, this study proposes the following hypotheses: (1) The learning motivation of state-funded normal university students is positively correlated with learning engagement, which means the stronger the learning motivation of state-funded normal university students, the higher their learning engagement; (2) The learning motivation of state-funded normal university students is positively correlated with professional identity, that is, the stronger the learning motivation of state-funded normal university students, the higher their professional identity; (3) The professional identity of state-funded normal university students is positively correlated with learning engagement, which means the stronger the professional identity of state-funded normal university students, the higher their learning engagement; (4) Professional

identity plays a mediating role in the relationship between state-funded normal university students' learning motivation and learning engagement. The research architecture is shown in [Figure 1](#).

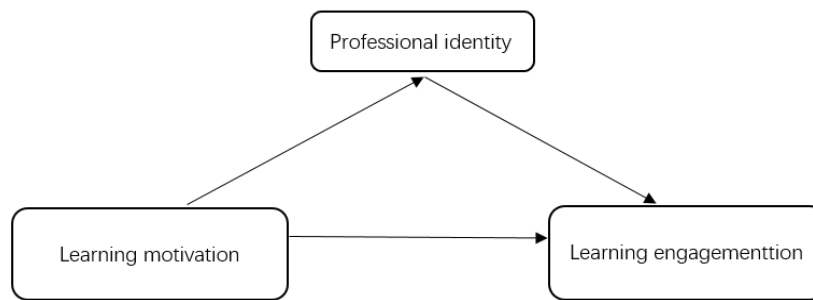


Figure 1.
The research architecture.

5. Research Design

5.1. Research Object

The research group for this study includes the state-funded regular university students from 10 colleges and universities in the province of Guangdong. Purposive Sampling: As a sampling method, 1,500 paper questionnaires were distributed to undergraduate public-funded normal students in 10 colleges and universities in Guangdong, including South China Normal University, Guangdong Polytechnic Normal University, Guangzhou University, Huizhou University, Zhaoqing University, Guangdong Second Normal University, Shaoguan University, Jiaying University, Lingnan Normal University, and Hanshan Normal University. Meanwhile, 1478 paper questionnaires were returned, with a recovery rate of 98.5%. The final effective scales totaled 1,449, and the effective rate of the scales was 96.6%. As shown in [Table 1](#).

Table 1.
The sampling information of state-funded normal university student.

Name	Option	Frequency	Percentage (%)
School name	South China Normal University	50	3.451
	Guangdong Polytechnic Normal University	100	6.901
	Guangzhou University	50	3.451
	Huizhou University	50	3.451
	Zhaoqing University	50	3.451
	Guangdong Second Normal University	50	3.451
	Shaoguan University	50	3.451
	Jiaying University	50	3.451
	Lingnan Normal University	899	62.043
	Hanshan Normal University	100	6.901
Gender	Male	458	31.608
	Female	991	68.392
Grade	Freshman year	377	26.018
	Sophomore year	371	25.604
	Junior year	430	29.676
	Senior year	271	18.703
Major	Liberal arts	1013	69.91
	Science and engineering	56	3.865
	Art and sports	380	26.225
Source place	Rural area	963	66.46
	Town	486	33.54
Whether any parents or relatives are teachers or work in schools at all levels	Yes	563	38.854
	No	886	61.146
Self-evaluation of the family's financial situation	Very poor	94	6.487
	Relatively poor	499	34.438
	Medium	829	57.212
	Relatively well off	19	1.311
	Rich	8	0.552
Total		1449	100.000

5.2. Research Tools

5.2.1. Learning Motivation Scale

The "Learning Motivation Scale" utilized in this study is an adaptation of [Xiting \[18\]](#) "College Students' Learning Motivation Scale." The scale mainly measures the performance of students in six dimensions, including intellectual pursuit, social orientation, material pursuit, fear of failure, personal achievement, and small group orientation. In order to adapt to this study, it was changed to a five-point Likert scale. Following measurement, the scale's Cronbach's alpha coefficient value is 0.953, which indicates that the questionnaire's reliability and validity are excellent, as shown in [Table 2](#).

5.2.2. Learning Engagement Scale

The "Learning Engagement Scale" employed in this study is based on the Chinese version of the [Schaufeli and Enzmann \[19\]](#)-compiled and revised "Utrecht Work Engagement Scale" (UWES). The Learning Engagement Scale that [Schaufeli and Enzmann \[19\]](#) created serves as the foundation for the scale's updated version. During the revision process, [Laitan, et al. \[20\]](#) made appropriate revisions and adjustments to some questions according to the culture and actual situation of Chinese students, making it more applicable to the learning characteristics and cultural background of Chinese students. The 17 elements on the scale are primarily divided into three categories: vitality, devotion, and concentration. It mainly measures the characteristics that students present when facing learning. A number of empirical studies have shown that the scale has a good application effect in China with high reliability and validity, effectively measuring students' learning engagement. In order to adapt to this study, it was changed to a five-point Likert scale. Following measurement, the scale's Cronbach's alpha coefficient value is 0.951, which indicates that the questionnaire's reliability and validity are excellent, as shown in [Table 3](#).

Table 2.
Learning motivation scale and Cronbach's α coefficient value.

Dimension	Cronbach's α	Number of terms
Knowledge seeking orientation	0.914	6
Social orientation	0.912	6
Material pursuit	0.863	4
Fear of failure	0.864	4
Personal achievement	0.801	3
Small population orientation	0.796	3
Total schedule	0.953	26

Table 3.
Learning engagement scale and Cronbach's α coefficient value.

Dimension	Cronbach's α	Number of terms
Vitality	0.900	6
Dedication	0.899	5
Focus	0.890	6
Total schedule	0.951	17

5.2.3. Professional Identity Scale

The "Free Normal University Students' Professional Identity Scale," developed by [Hongyu, et al. \[21\]](#), served as the foundation for the "Professional Identity Scale" used in this study. Internal value identification, external value identification, and volitional and behavioral identification are the three dimensions that the 15 questions fall under. In order to adapt to this study, it was changed to a five-point Likert scale. Following measurement, the scale's Cronbach's alpha coefficient value is 0.943, which indicates that the questionnaire's reliability and validity are excellent, as shown in [Table 4](#).

Table 4.
Professional identity scale and Cronbach's α coefficient value.

Dimension	Cronbach's α	Number of terms
Intrinsic value identification	0.927	7
Extrinsic value identification	0.857	3
Willpower behavior identification	0.879	5
Total schedule	0.943	15

5.3. Data Processing

Using SPSS22.0 statistical tools to analyze the recovery data, conducting descriptive statistics, average difference tests, and correlation research on the learning motivation, professional identity, and learning investment of regular university students with state funding, using Analysis of Moment Structures, which is software that uses structural equations to explore the relationship between variables to test the mediation effect, and adopting the Bootstrap method to test analyze.

6. Research Results

6.1. Common Method Bias Test

In this study, the Harman test for common method bias was used, and Harman single factor method analysis was performed on all items to test whether there was serious common method bias. Among them, the variance explanation rate of the largest factor is 38.718%, which is lower than the critical value of 40%. The findings show that the variables' common method deviation is not significant.

6.2. Descriptive Statistical Analysis

Using SPSS software to conduct descriptive statistics on the learning motivation, learning investment, and professional identity of state-funded normal university students, as shown in [Table 5](#).

Table 5.

Descriptive statistics on the learning motivation, learning investment and professional identity of state-funded normal university students.

Variable/ Dimensionality	Lower	Upper	Mean value	Standard deviation	Skewness statistics standard error		Kurtosis statistics standard error	
Learning motivation	1.00	5.00	3.715	0.757	-0.807	0.064	0.535	0.128
Knowledge and progress	1.00	5.00	3.877	0.920	-0.980	0.064	0.319	0.128
Social orientation	1.00	5.00	3.836	0.871	-0.971	0.064	0.689	0.128
Material pursuit	1.00	5.00	3.921	0.891	-1.005	0.064	0.776	0.128
Fear of failure	1.00	5.00	3.305	0.999	-0.400	0.064	-0.398	0.128
Personal achievement	1.00	5.00	3.555	0.981	-0.565	0.064	-0.164	0.128
Small population orientation	1.00	5.00	3.579	1.012	-0.494	0.064	-0.248	0.128
Professional identity	1.00	5.00	3.889	0.699	-0.711	0.064	1.376	0.128
Intrinsic value identification	1.00	5.00	4.102	0.727	-1.001	0.064	1.951	0.128
Extrinsic value identification	1.00	5.00	3.729	0.873	-0.563	0.064	0.266	0.128
Willpower behavior identification	1.00	5.00	3.686	0.814	-0.432	0.064	0.377	0.128
Learning engagement	1.00	5.00	3.445	0.802	-0.309	0.064	-0.024	0.128
Vitality	1.00	5.00	3.238	0.907	-0.201	0.064	-0.318	0.128
Dedication	1.00	5.00	3.646	0.890	-0.736	0.064	0.387	0.128
Focus	1.00	5.00	3.483	0.842	-0.401	0.064	0.212	0.128

The descriptive statistics of learning motivation show that the total average score of learning motivation is 3.715, indicating that the overall learning motivation of state-funded normal university students is at the upper-middle level. The average scores for each dimension of learning motivation are significantly higher than the theoretical average (3 points) at the upper-middle level. The descriptive statistical results of professional identity show that the total average score of occupational identity is 3.889, which shows that the professional identity of state-funded normal university students is relatively high. The average scores of each dimension of professional identity are significantly higher than the theoretical average (3 points), at the upper-middle level. The descriptive statistics for learning input show that the total average score is 3.445. This means that the level of learning input for normal state-funded college students is about average, not quite as high as the levels of learning motivation and professional identity. The average scores of each dimension of learning engagement are significantly higher than the theoretical average (3 points), at the moderate level.

6.3. Difference Analysis

We used one-way analysis of variance and the independent sample t-test to do a mean difference test of demographic variables on data about the learning engagement of normal state-funded college students.

Table 6.

The mean difference test on the learning input data of state-funded normal university students.

Scale	Variable name	Variable value	Sample size	Average value	Standard deviation	T	F	P	LSD
Learning engagement	Gender	Male	458	3.574	0.86	4.187		0.000***	
		Female	991	3.386	0.768				
	Grade	1 Freshman year	377	3.394	0.793		12.087	0.000***	4>3,2,1
		2 Sophomore year	371	3.455	0.804				
		3 Junior year	430	3.329	0.794				
		4 Senior year	271	3.688	0.779				
	Major	1 Liberal arts	1013	3.332	0.752		44.065	0.000***	3>2,1
		2 Science and engineering	56	3.300	0.944				
		3 Art and sports	380	3.768	0.826				
	Source place	Rural area	963	3.459	0.8	0.903		0.367	
		Town	486	3.418	0.807				
	Self-evaluation of the family's financial situation	Very poor	94	3.357	1.082		0.94	0.440	
		Relatively poor	499	3.438	0.816				
		Medium	829	3.454	0.758				
		Relatively well off	19	3.728	0.543				
		Rich	8	3.338	1.139				
Vitality	Gender	Male	458	3.41	0.952	4.932		0.000***	
		Female	991	3.159	0.875				
	Grade	1 Freshman year	377	3.173	0.898		12.099	0.000***	4>3,2,1
		2 Sophomore year	371	3.239	0.903				
		3 Junior year	430	3.119	0.897				
		4 Senior year	271	3.52	0.886				
	Major	1 Liberal Arts	1013	3.116	0.863		37.132	0.000***	3>2,1
		2 Science and engineering	56	3.182	1.033				
		3 Art and sports	380	3.574	0.922				
	Source place	Rural area	963	3.254	0.912	0.926		0.354	
		Town	486	3.207	0.898				
	Self-evaluation of the family's financial situation	Very poor	94	3.222	1.056		0.594	0.667	
		Relatively poor	499	3.216	0.929				
		Medium	829	3.248	0.875				
		Relatively well off	19	3.526	0.85				
		rich	8	3.167	1.179				
Dedication	Gender	Male	458	3.745	0.93	2.846		0.004**	

Scale	Variable name	Variable value	Sample size	Average value	Standard deviation	T	F	P	LSD
	Grade	Female	991	3.602	0.869		7.925	0.000***	4>3,2,1
		1 Freshman year	377	3.588	0.896				
		2 Sophomore year	371	3.679	0.901				
		3 Junior year	430	3.539	0.88				
		4 Senior year	271	3.856	0.852				
	Major	1 Liberal Arts	1013	3.553	0.848		29.986	0.000***	3>2,1
		2 Science and engineering	56	3.368	1.01				
		3 Art and sports	380	3.939	0.918				
	Source place	Rural area	963	3.666	0.886	1.17		0.242	
		Town	486	3.608	0.9				
	Self-evaluation of the family's financial situation	Very poor	94	3.447	1.213		1.756	0.135	
		Relatively poor	499	3.651	0.928				
		Medium	829	3.663	0.825				
		Relatively well off	19	3.905	0.583				
		Rich	8	3.45	1.068				
Focus	Gender	Male	458	3.597	0.915	3.48		0.001**	
		Female	991	3.432	0.802				
	Grade	1 Freshman year	377	3.452	0.826		10.132	0.000***	4>3,2,1
		2 Sophomore year	371	3.483	0.853				
		3 Junior year	430	3.365	0.844				
		4 Senior year	271	3.717	0.806				
	Major	1 Liberal Arts	1013	3.365	0.795		42.939	0.000***	3>2,1
		2 Science and Engineering	56	3.363	0.93				
		3 Art and Sports	380	3.818	0.864				
	Source place	Rural area	963	3.49	0.834	0.408		0.684	
		Town	486	3.471	0.86				
	Self-evaluation of the family's financial situation	Very poor	94	3.418	1.171		0.746	0.561	
		Relatively poor	499	3.482	0.842				
		Medium	829	3.486	0.801				
		Relatively well off	19	3.781	0.468				
		Rich	8	3.417	1.25				

Note: **p<0.01,***p<0.001. (significance level, ** represents 1% significance level, *** represents 0.1% significance level) .

Table 6 demonstrates that there are gender variances. There are gender differences in the learning input of state-funded normal university students in general and in all dimensions. The learning engagement, vitality, dedication, and concentration of men are significantly higher than those of women. In terms of grades, state-funded normal university students from different grades have significant differences in learning engagement, vitality, dedication, and concentration. Using LSD comparison, which is the least significant difference method. It is usually used to compare one or more pairs of professionally significant sample means. The fourth grade performs significantly better than other grades in terms of learning engagement and other metrics. In terms of majors, state-funded normal university students of different majors have significant differences in learning engagement, vitality, dedication, and concentration. Using LSD, it was found that the learning investment and scores of various dimensions of state-funded normal university students in arts and sports are significantly higher than those in science and liberal arts. In terms of student origin, there are no significant differences in learning engagement, vitality, dedication, and concentration among state-funded normal university students of different student origins. In terms of family economic status, the learning engagement, liveliness, devotion, and concentration of state-funded normal university students from various socioeconomic backgrounds are not significantly different from one another.

6.4. Correlation Analysis

6.4.1. Correlation Test

The relationship between learning motivation, professional identity, and learning engagement was assessed using Pearson correlation. **Table 7** demonstrates a significant positive relationship ($p < 0.01$) between learning engagement, professional identity, and motivation for learning.

Table 7.

Correlation analysis table of learning motivation, professional identity and learning engagement.

Variable/ Dimensionality	Learning motivation	Professional identity	Learning engagement
Learning motivation	1		
Professional identity	0.595**	1	
Learning engagement	0.591**	0.706**	1

Note: ** $p < 0.01$.

Pearson correlation was used to analyze the relationship among the dimensions of learning motivation, professional identity, and learning engagement. **Table 8** demonstrates that there is a strong relationship ($p < 0.01$) between the dimensions of learning motivation, professional identity, and learning engagement. Among them, there are moderately positive and significant correlations between learning motivation and all dimensions of professional identity, between professional identity and learning engagement, and between learning motivation and learning engagement. As can be observed, there is a strong positive association between the learning motivation of state-funded, regular university students and their professional identities, as well as their levels of involvement in their studies. Professional identities also have a favorable influence on learning investment. In other words, public-funded normal students' levels of learning engagement and professional identity are all higher the more motivated they are to learn.

6.4.2. Mediating Effect Test

In this study, the learning investment of state-funded normal university students is established as a dependent variable, professional identity is set as a mediating variable, and the learning motivation of state-funded normal university students is set as an independent variable. To examine the mediating effect, an analysis of Moment Structures is used. The total effect of the motivation-professional identity-learning input path is 0.217, the direct effect is 0.204, and the indirect effect is 0.217, and the lowest value (Lower) and the highest value (Upper) of the indirect effect do not contain 0 (0.213, 0.328), so the mediation effect is established. The mediating test results of vocational identity on learning involvement of state-funded normal university students' learning motivation are shown in **Table 9**.

6.5. Research Conclusions

Based on the above analysis, the conclusions of this study are: (1) Public-funded normal students' motivation to learn is positively connected with their level of interest in their studies. (2) The learning motivation of state-funded normal university students is positively correlated with professional identity. (3) The professional identity and learning engagement of state-funded normal university students (4) Professional identity plays a mediating role in the relationship between learning motivation and the learning engagement of state-funded normal university students. That is, the hypothesis proposed in this study is established.

Table 8.

Correlation analysis of dimensions of learning motivation, professional identity, and learning engagement.

Variable/ Dimensionality	1	2	3	4	5	6	7	8	9	10	11	12
1.Knowledge and progress	1											
2.Social orientation	0.730**	1										
3.Material pursuit	0.643**	0.672**	1									
4.Fear of failure	0.478**	0.480**	0.499**	1								
5.Personal achievement	0.556**	0.559**	0.647**	0.584**	1							
6.Small population orientation	0.561**	0.589**	0.516**	0.514**	0.628**	1						
7.Intrinsic value identification	0.504**	0.556**	0.413**	0.203**	0.353**	0.434**	1					
8.Extrinsic value identification	0.414**	0.462**	0.376**	0.300**	0.382**	0.409**	0.670**	1				
9.Willpower behavior identification	0.499**	0.548**	0.382**	0.348**	0.417**	0.484**	0.717**	0.620**	1			
10.Vitality	0.456**	0.525**	0.331**	0.300**	0.362**	0.445**	0.547**	0.504**	0.637**	1		
11.Dedication	0.559**	0.609**	0.447**	0.304**	0.431**	0.468**	0.632**	0.524**	0.642**	0.731**	1	
12.Focus	0.463**	0.543**	0.350**	0.297**	0.365**	0.424**	0.526**	0.477**	0.615**	0.747**	0.768**	1

Note: **p<0.01.

Table 9.

The effect test table of the effect of learning motivation of public-funded normal students on learning investment through professional identity

Path	Effect	Effect value	Lower	Upper
Learning motivation→	Indirect effect	0.217	0.123	0.328
Professional identity→	Direct effect	0.204	None	None
Learning engagement	Total effect	0.421	None	None

7. Discussion and Suggestions

7.1. Discussion

Descriptive statistical analysis reveals that the overall average score and the average score for each dimension of learning motivation, professional identity, and learning engagement among state-funded normal university students are greater than the theoretical average (3 points); this is at a middle-upper level. It demonstrates that students in state-funded normal universities are highly motivated to learn, eager to acquire knowledge, value communication and cooperation with others, seek material rewards, are concerned about failure, hope for personal achievements, and require communication with classmates. After graduation, students have a strong sense of identity with the teaching profession, recognize the meaning and value of being a state-funded normal university student, believe that the profession has external value, and want to further enhance their professional identity through hard work and perseverance. State-funded normal university students have a certain level of energy, a willingness to contribute, and a certain degree of concentration, but these characteristics all need to be improved.

Through difference analysis, it is found that there are gender differences, grade differences, and major differences in the learning investment of state-funded normal university students in general and in all dimensions, which is consistent with the research of Wang [22], Sun [23], and Lv, et al. [24].

The analysis of the correlation test reveals a substantial positive link between the state-funded, typical university students' learning engagement, professional identity, and motivation to learn, which is basically consistent with the research results of Ma, et al. [16]. Among them, all dimensions of the three scales are moderately positively and significantly correlated, which is consistent with the research results of Bo [25] and Xiting [18].

The test and analysis of the mediating effect showed that learning motivation, professional identity, and learning investment all had significant effect values. This means that learning motivation can significantly predict professional identity, professional identity can significantly predict learning engagement, and both learning engagement and motivation to study are linked to professional identity. This mostly agrees with the findings of the studies conducted by Laitan, et al. [20] and Hongyu, et al. [21].

7.2. Research Suggestions

According to the above discussion results, the learning engagement of state-funded normal university students is not only directly affected by learning motivation but also affected by the mediating role of professional identity. Therefore, we can further explore how to improve the learning engagement of state-funded normal university students in two aspects: learning motivation and professional identity, so as to improve the quality of state-funded normal university students' training, meet the needs of constructing teachers' teams in rural areas, and provide teacher talent guarantees for rural revitalization.

More people need to be aware of and exposed to the state-funded normal university students' educational policies, and it needs to be encouraged that college entrance exam graduates have a thorough understanding of the policy in terms of enrollment, training, employment, and other factors, especially to strengthen the recognition of state-funded normal university students and the professional teacher's identity, allowing college entrance examination graduates to fully accept and recognize state-funded normal university students.

When training, it is necessary to strengthen the innovation of educational concepts and teaching methods for state-funded normal university students, increase investment in the training funds for state-funded normal university students, and provide them with more conditions and opportunities for internship and practice.

After employment, it is necessary to continuously improve the employment system and post-employment development policy for state-funded normal university students, establish an employment supervision mechanism, prevent talent drain, and continuously improve their professional identity through training and other methods.

All in all, state-funded normal university students are a special group that plays an important role in rural revitalization. It is necessary to work together through policy mechanisms, social forces, schools, and families to improve the training model for state-funded normal university students and to increase the degree of learning engagement of state-funded normal university students through various effective channels.

References

- [1] Bulletin of the Ministry of Education of the People's Republic of China, "Opinions of the ministry of education and other six departments on strengthening the construction of rural teachers in the new era," *Bulletin of the Ministry of Education of the People's Republic of China*, vol. 09, pp. 31-35, 2020.
- [2] G. Ding and M. Li, "Investigation and policy analysis of normal university students in China," *Educational Research*, vol. 35, no. 11, pp. 95-106, 2014.
- [3] Y. Zhai, S.-l. Feng, and Y. Tan, "Research on public funded teacher education policy based on teaching quality," *Science of Education*, vol. 38, no. 01, pp. 49-56, 2022.

- [4] R. Boshier, "Educational participation and dropout: A theoretical model," *Adult Education*, vol. 23, no. 4, pp. 255-282, 1973. <https://doi.org/10.1177/074171367302300401>
- [5] W. Zhang and F. Li, "A review of studies on learning motivation at home and abroad," *Gakuen*, vol. 14, no. 07, pp. 84-86, 2021.
- [6] J. Paterson, J. Higgs, S. Wilcox, and M. Villeneuve, "Clinical reasoning and self-directed learning: Key dimensions in professional education and professional socialisation," *Focus on Health Professional Education*, vol. 4, no. 2, pp. 5-21, 2002.
- [7] C. Ewan, "Becoming a doctor. In the medical teacher, ed. K. Cox and C. Ewan." Edinburgh: Churchill Livingstone, 1988, pp. 83-87.
- [8] S. Yi, "A problem to be faced by professional education," *Xuehai, Social Work Identity*, vol. 01, pp. 116-123, 2019.
- [9] G. D. Kuh, "How to help students achieve," *Chronicle of Higher Education*, vol. 53, no. 41, pp. B12-13, 2007.
- [10] X. Li and R. Huang, "A revised report on the learning engagement scale (UWES-S) for college students," *Psychological Research*, vol. 3, no. 01, pp. 84-88, 2010.
- [11] M. Evans and A. R. Boucher, "Optimizing the power of choice: Supporting student autonomy to foster motivation and engagement in learning," *Mind, Brain, and Education*, vol. 9, no. 2, pp. 87-91, 2015. <https://doi.org/10.1111/mbe.12073>
- [12] A. J. Martin, "Examining a multidimensional model of student motivation and engagement using a construct validation approach," *British Journal of Educational Psychology*, vol. 77, no. 2, pp. 413-440, 2007. <https://doi.org/10.1348/000709906x118036>
- [13] W. Wasityastuti, Y. P. Susani, Y. S. Prabandari, and G. R. Rahayu, "Correlation between academic motivation and professional identity in medical students in the faculty of medicine of the Universitas Gadjah Mada Indonesia," *Educación médica*, vol. 19, no. 1, pp. 23-29, 2018. <https://doi.org/10.1016/j.edumed.2016.12.010>
- [14] R. Kusurkar, T. J. Ten Cate, M. Van Asperen, and G. Croiset, "Motivation as an independent and a dependent variable in medical education: A review of the literature," *Medical Teacher*, vol. 33, no. 5, pp. e242-e262, 2011. <https://doi.org/10.3109/0142159x.2011.558539>
- [15] C. Wei, X. Zhang, H. Zhao, X. Zhang, and F. Yan, "Study on the type of professional identity and learning motivation of free normal university students," *Teacher Education Research*, vol. 25, no. 03, pp. 66-71+85, 2013.
- [16] H. Ma, Y. Cai, H. Tang, L. Wu, K. Li, and Z. Zhou, "The internal structure and characteristics of teachers' professional identity of normal university students," *Teacher Education Research*, vol. 25, no. 01, pp. 49-54, 2013.
- [17] X. Tan and Y. Liu, "An empirical study on the relationship between teachers' professional identity and learning engagement in Normal University," *Journal of Mianyang Normal University*, vol. 33, no. 09, pp. 118-121+126, 2014.
- [18] H. Xiting, *Mental health education for college students*. China: East China Normal University Press, 2004.
- [19] W. B. Schaufeli and D. Enzmann, *The Burnout companion to study and practice: A critical analysis*. London: Taylor & Francis, 2002.
- [20] F. Laitan, S. Kan, and Z. Fenghua, "A study on the reliability and validity of the Chinese version of learning engagement scale," *Chinese Journal of Clinical Psychology*, vol. 16, no. 6, pp. 618-620, 2008.
- [21] Z. Hongyu, L. Yanting, Z. Xiaohui, and Z. Yan, "Establishment of professional identity scale for free normal university students," *Journal of Psychological and Behavioral Research*, vol. 10, no. 2, pp. 143-148, 2012.
- [22] M. Wang, "Study on the status and relationship of learning commitment, professional commitment of public funded normal university students: A case study of Liaocheng University in Shandong Province," *Journal of Western China*, vol. 24, pp. 129-133, 2020.
- [23] K. Sun, "Study on the current situation of learning engagement of public funded normal university students in local universities -- a case study of primary education major of L university," *Journal of Kaifeng Vocational College of Culture and Art*, vol. 40, no. 03, pp. 101-102, 2020.
- [24] C. Lv, A. Zhou, and Y. Shen, "An empirical study on professional identity and learning engagement of public funded normal University students: Based on the mediating role of academic self-efficacy," *Education and Testing*, vol. 02, pp. 58-66, 2022.
- [25] Y. Bo, "An empirical study on the influencing factors of teachers' professional identity," *Hunan First Teachers Journal*, vol. 9, no. 3, pp. 51-54, 2009.