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The Relation Between Learning Engagement and Academic Self-Efficacy Toward Academic Achievement among University Students

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ABSTRACT: The aim of this study is to investigate the correlation between learning engagement and academic self-efficacy towards academic achievement among normal college students in China. The method of this research is a descriptive survey conducted in the field. Students' statistical community from Shangrao Normal University in Jiangxi Province, China that their number is about 15,000 people, and 1,507 people were selected as a sample by simple random method. Out of these participants, 471 were malearning engagement (31.3%) and 1036 were femalearning engagement (68.7%) students. This study used Learning Engagement Scale-Student (UWES-S), Academic Self-efficacy Questionnaire (ASEQ) and academic achievement assessment as instruments. The data was analyzed using t-tests, one-way ANOVA and regression analysis. The results indicate that there is no significant gender difference observed in learning engagement or academic self-efficacy. However, when considering different grades, learning engagement demonstrates a significant disparity with the lowest level found among Grade 2 students, which significantly differs from Grade 1, Grade 3, and Grade 4 respectively. On the other hand, no significant differences are observed in academic self-efficacy across different grades. Furthermore, there are notable learning engagement variances between students with varying levels of achievement regarding both learning engagement and academic self-efficacy. Regression analysis reveals that learning engagement directly influences academic achievement while academic self-efficacy acts as a mediating factor for academic achievement. The research results confirmed the significant correlation between students' learning engagement, academic self-efficacy, and academic achievement; learning engagement has a direct impact on academic achievement, meanwhile academic self-efficacy mediates the relationship between learning engagement and academic achievement. Driven and facilitated by the power of the interactive field, the participants can reduce the sense of inferiority, overcome the fear of feeling and enhance the ability of introspection and self-efficacy.

Keywords: Normal college students, Learning engagement, Academic self-efficacy, Academic achievement.

I. INTRODUCTION

In the report of the 20th National Congress in Communist Party of China, the general Secretary Xi Jinping proposed as: "Implementing the strategy of rejuvenating the country through science and education, which shown the method or way-forward for promoting the construction of educational power. The key to education is teachers. The Teacher Education also proposed to run a number of high-level and distinctive teacher education colleges and normal majors as well as offering specialized teacher training programs to lay a solid foundation for the long-term sustainable development of teacher education in China, In recent years, there has been a growing emphasis on enhancing the quality and equity of education, particularly through robust teacher support and talent development initiatives (2018) [1]. The aim of training graduates from local normal colleges and universities is to cultivate highly skilled teachers equipped with comprehensive expertise. These teachers receive high-quality education, often from top-ranking universities, which is essential for compulsory elementary and secondary schools. Furthermore, elevating the academic standards of normal colleges and universities serves as the cornerstone for nurturing talent in these institutions.

With the increasing focus on positive psychological attributes and life satisfaction, attributes such as learning engagement and academic self-efficacy have garnered significant attention and research interest [2]. Numerous studies have highlighted the importance of these positive mental states in predicting academic performance [3-5]. It has become widely acknowledged in theoretical research that improving students' learning outcomes and enhancing the quality of higher education necessitates attention to students' engagement in the learning process [6]. Pascarella and Terenzizi [7], in their work on how universities influence student development, emphasized the pivotal role of student engagement: The impact of universities on students largely depends on the level of effort and involvement of individual students. Some research indicates that students' learning engagement exerts a more significant influence on academic achievement than factors such as university environment or students' family backgrounds [8]. Additionally, studies suggest that college students' engagement in learning significantly correlates with academic success, with different aspects of engagement affecting learning outcomes differently [9].

Therefore, it is evident that learning engagement plays a crucial role in academic achievement. Liao Youguo [10] and Kahu and Nelson [11] have underscored the importance of learning engagement in promoting college students' success and enhancing the quality of higher education.

Different researchers give different interpretations on the operational definition and measurement tools of learning engagement. Fredricks et al. [12] believed that learning engagement is not only accompanied by explicit behavioral engagement, but also by implicit emotional-engagement as well as cognitive-engagement.

II. LITERATURE REVIEW

Among them, engagement of student behaviors refers to students' learning behavior and active participation in campus activities both inside and outside the classroom. Emotional involvement refers to students' belonging to the school, their love for classmates and teachers, etc. In agreement with Pintrich and Schragben [13], the cognitive engagement refers to students' learning motivation and strategic use in the learning processes and educational outcome. Schaufeli et al. [14] believed that learning interaction is a positive and rewarding state of mind and is associated with learning success, including three dimensions namely strength, dedication and concentration. Vigor refers to having outstanding energy and toughness in learning, willing to work hard for learning without fatigue, and persevering in the face of difficulties; Dedication refers to individuals with a strong sense of meaning, and enthusiasm for learning process, who are able to devote themselves to learning and dare to accept challenges. Based on report of Chan & Uusiautti [15], Concentration is a euphoric state of total

engagement, focused on learning and experiencing pleasure. Although researchers have different perspectives and dimensions on the concept of learning engagement the common denominator can be seen from the perspective of various scholars, that is, learning engagement reflects the comprehensive participation of students in cognitive, emotional and behavioral aspects of the learning activities they experience. In this study, Schaufeli's definition is adopted that the learning engagement is a positive and completive emotional and cognitive state in related to learning process, which means that an individual has abundant energy and good psychological toughness during learning, can recognize the meaning of learning, and is thus enthusiasm for learning and immersed in the learning state [16].

Based on the Work Engagement Scale, Schaufeli et al. [17] could developed the Utrecht Work Engagement Scale-Student Edition (UWES-S), which included 17 items in three dimensions: vigor, dedication and concentration, and used the scale to measure college students' learning engagement. In order to make the scale truly transform from work situation to learning situation, Li and Rong [16] locally revised the dimensions and partial expressions of UWES-S, and divided the scale into three dimensions of motivation, energy and concentration, with a total of 17 items. Motivation in educational classification means that the learner is very, interested in learning, understands the meaning of learning and experiences happiness in learning. Energy refers to a person who has abundant energy and good mental strength, for his learning efforts without fatigue, and can persevere in the face of difficulties. The characteristic of concentration is that individuals are fully absorbed in their own learning and immersed in their own learning to achieve a state of selflessness. This statement makes the operational definition of dimension easier to understand and define. This scale is adopted in this study as a tool to measure the learning engagement of normal university students.

Academic self-efficacy is a significant predictor of academic achievement. Zhu et al. [18] highlighted a strong correlation between self-efficacy and academic performance, indicating that higher academic self-efficacy positively predicts students' academic success. Moreover, academic self-efficacy not only influences academic achievement but also plays a pivotal role in shaping learning engagement. Li Ruolan [19] suggested that academic self-efficacy drives students' learning activities by influencing goal-setting and participation in learning tasks, consequently enhancing their level of engagement.

Self-efficacy, a core concept in social psychology, refers to an individual's belief in their ability to achieve specific goals. Bandura [20] defined academic self-efficacy as learners' confidence in their capacity to attain academic goals and complete tasks successfully. This belief influences various aspects of behavior, including choice, effort, persistence, coping, and emotional responses [21]. Nian Jing [22] operationalized academic self-efficacy as students' evaluation of their ability to handle academic challenges and improve through learning activities.

Liang Yusong [23] developed a widely used questionnaire to assess academic self-efficacy, comprising two dimensions: learning ability efficacy and learning behavior efficacy. Learning ability efficacy relates to students' confidence in completing schoolwork and achieving good grades, while learning behavior efficacy pertains to the effectiveness of their learning strategies in achieving desired outcomes.

This study investigates the relationship between learning engagement, academic self-efficacy, and academic achievement among undergraduates at a local normal college in Jiangxi Province. Understanding this relationship can enhance the professional competence of normal college students and prepare them for future endeavors. Foreign researchers like Astin [24] have emphasized the positive correlation between students' involvement in school life and their learning outcomes, while Schaufeli et al. [14] suggested that academic self-efficacy serves as a full mediator in the relationship between learning engagement and academic performance.

Domestic scholars, such as Lin Jie et al. [25] and Xie Fenhui [2], have also explored the connection between academic self-efficacy, learning engagement, and academic performance. Building upon existing research, this study aims to further investigate these relationships among local normal university students. The hypothesis of this study is as follows:

Ha1: There are significant differences in learning engagement and academic efficacy on demographic variables such as gender, grade and academic level.

Ha2: There is a significant correlation among learning-engagement of students and academic self-efficacy.

Ha3: There is a significant correlation among students' academic self-efficacy and academic-achievement.

Ha4: Academic self-efficacy mediates the relationship among learning-engagement and academic achievement.

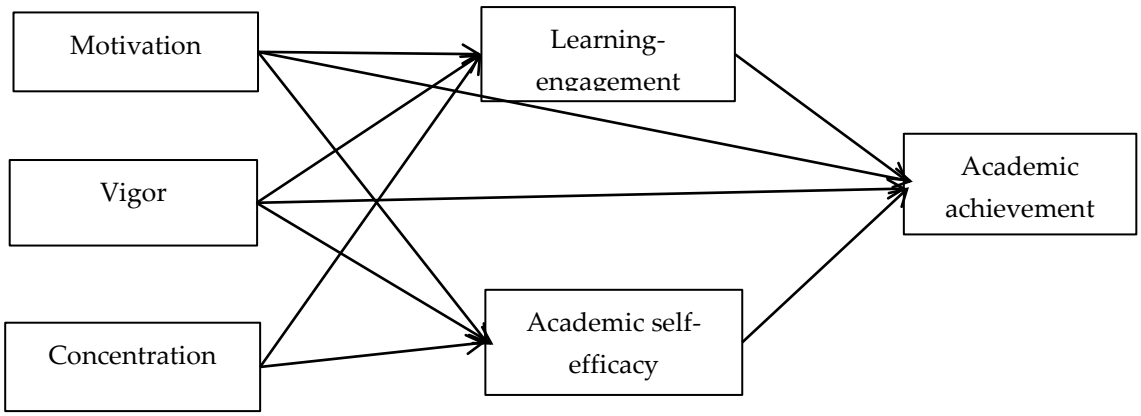

FIGURE 1. Conceptual framework between learning engagement and academic self-efficacy toward academic achievement among university students.

The self-efficacy in the academic term is include student's belief in their ability to succeed. where students with high self-efficacy are more likely to set challenging goals, and demonstrate resilience in their academic results (points) [26]. When students actively participate in the learning process, they develop a sense of competence and mastery, which strengthens their academic self-efficacy [27]. The relationship between learning engagement and academic self-efficacy has significant impact for academic achievement; Students who are highly engaged in their learning and have a strong sense of self-efficacy are more likely to do well academically success in their courses, and achieve their educational goals. These reports should be studied in a large society like China. Therefore, this research gap is the background of the present research work to better understand this subtle correlation in the Chinese academic environment.

Therefore, considering the importance of the topic and also the learning engagement and academic efficiency of normal students in Shangrao Normal University and how the learning engagement and academic self-efficacy of students affect their academic progress and also since no similar research has been done on these students. It is necessary to conduct the present research.

According to the said items this study attempts to investigate the current situation of learning engagement and academic efficacy of normal students in Shangrao Normal University, and whether students' learning engagement and academic self-efficacy produce excellent academic achievement.

III. METHODOLOGY

1. RESEARCH PARTICIPANTS

The method of this research is a descriptive survey conducted in the field. Students' statistical community from Shangrao Normal University in Jiangxi Province, China that their number is about 15,000 people, and 1,507 people were selected as a sample by simple random method. Out of these participants, 471 were malearning engagement (31.3%) and 1036 were femalearning engagement (68.7%) students. In this study, undergraduate students of the normal university where the author works were selected as the research objects. Through the Questionnaire Star Platform, 1507 students from this school answered the questionnaires. Without missing values. Among them, 471 were boys (31.3%) and 1036 were girls (68.7%). 756 come from Grade 1, accounting for 50.2%, Grade 2 are 353, accounting for 23.4%, Grade 3 are 299, accounting for 19.8% and Grade 4 are 99, accounting for 6.6%.

2. RESEARCH INSTRUMENTS

2.1 Learning Engagement Scale (UWES-S)

This questionnaire is a translation and revision of Schaufeli's Utrecht Work Engagement Scale-- Student Edition (UWES-S) by Li Xiying et al in 2010. The revised scale consists of 17 items. The questionnaire adopts the Likert 7-point scoring method, from 1 to 7, representing: "never, almost never, rarely, sometimes, often, very frequently and always". The higher the score, the higher the individual's learning engagement. The questionnaire was divided into three dimensions: motivation (6 items), vigor (6 items), and concentration (5 items). In this study, the α coefficient of the total scale was 0.972, and the α coefficients of the three sub-scales of motivation, vigor and concentration were 0.902, 0.949 and 0.944 respectively.

2.2 Determination of the Academic Self-Efficacy Questionnaire (ASEQ)

The proposed and conducted Academic Self-Efficacy Questionnaire or ASEQ was compiled by Yusong and Zongkui [23] with reference to relevant dimensions in the academic self-efficacy questionnaire compiled by Pintrich and DeGroot [13]. The scale divides academic self-efficacy into two independent dimensions: learning ability efficacy and learning behavior efficacy. There were 11 items for each dimension, totaling 22 items (Coronbachα=0.89). The five-point system is adopted, and the higher the score, the higher the sense of efficacy. According to the internal reliability analysis of the questionnaire, the Cronbach's Alpha coefficient of learning self-efficacy was 0.974, and learning ability self-efficacy and learning behavior self-efficacy were 0.957 and 0.952, respectively.

3. ACADEMIC ACHIEVEMENT ASSESSMENT

In most colleges and universities, students' comprehensive assessment results are used to measure their academic performance. Comprehensive evaluation is a series of quantitative indicators, standards and implementation rules for students' moral education, intellectual education and style of work. In this study, only the comprehensive evaluation of intellectual education was selected to reflect the learning outcomes of college students, that is, the ranking of professional scores in the previous semester was used as an indicator of academic performance [10]. Likter 5-grade was adopted, and the intellectual education scores were divided into "bottom 20%", "61% ~ 80%", "41% ~ 60%", "top 21% ~ 40%" and "top 20%" in class ranking. They are calculated on a scale of one to five, representing "very poor" to "very good," with higher scores representing higher academic

achievement. Although these questionnaires were standard, their validity was reconfirmed by expert professors (8 people) and their reliability was confirmed with Cronbach's alpha (higher than 0.80).

4. DATA PROCESSING

SPSS2.7 and PROCESS v3.5 were used to analyze and process the data. Specific data description methods including descriptive statistical analysis (DSA), T- student test, one-way ANOVA method and also regression analysis. The correlation analysis was used to investigate the correlation between learning engagement, academic self-efficacy and academic achievement. Academic self-efficacy on the test method of the mediating effect of bootstrap program was proposed., this paper examined the mediating role of self-efficacy among learning-engagement and academic-achievement. Stepwise regression method was used to examine the mediating effect of academic self-efficacy on the relationship between various dimensions of learning engagement and academic achievement.

IV. RESULTS

1. OVERALL CURRENT STATUS

This study explored the overall development status through descriptive statistics on the overall level of learning engagement, academic self-efficacy and their dimensions. The research results are shown in Table 1.

Table 1. Descriptive statistics of learning engagement, academic self-efficacy, their dimensions and academic achievement

Factor	Min	Max	M	SD
Learning engagement	1.00	5.87	3.61	0.74
Motivation	1.00	4.00	1.79	0.51
Vigor	1.00	7.00	4.49	1.19
Concentration	1.00	7.00	4.55	1.17
Academic self-efficacy	1.00	5.00	3.23	0.80
Learning ability-efficacy	1.00	5.00	3.22	0.84
Learning behavior-efficacy	1.00	5.00	3.25	0.81

Based on information presented in Table 1, the mean value of the total score of learning engagement was 3.61, lower than the median value 4 of grade 7, and the mean value of motivation dimension of each factor score was 1.79, which is lower than 2 "almost never", while vigor and concentration dimensions were slightly above the median. From the point of view of academic self-efficacy and scores of each dimension, all reached the median value of 3 for the five grades.

2. DEMOGRAPHIC DIFFERENCES AMONG VARIABLES

2.1 Differences in gender.

Table 2 shows that the p values of differences in learning engagement, academic self-efficacy and their dimensions between different genders were all greater than 0.05. Therefore, the original hypothesis was accepted, that is, learning engagement and academic self-efficacy could not be found significant difference in gender.

Table 2. Test of gender differences in college students' learning engagement, academic self-efficacy and each dimension

Factor	Male		Female		t	p
	M	SD	M	SD		
Learning engagement	3.66	0.88	3.59	0.67	1.73	0.08
Motivation	1.81	0.55	1.79	0.50	0.80	0.43
Vigor	4.57	1.41	4.45	1.07	1.62	0.11
Concentration	4.61	1.38	4.52	1.07	1.31	0.19
Academic self-efficacy	3.25	0.91	3.23	0.74	0.37	0.71
Learning ability efficacy	3.24	0.94	3.21	0.79	0.77	0.44
Learning behavior efficacy	3.25	0.93	3.25	0.75	-0.05	0.96

P<0.05

2.2 Differences in grade

As presented in Table 3, learning engagement and its dimensions had significant differences between grade groups (p<0.05). After pairings comparison, it could be seen that the lowest level was in Grade 2, and the difference was significant compared with Grade 1, Grade 3 and Grade 4 respectively (Grade 2<Grade 1, Grade 3 and Grade 4), and the highest level was in Grade 4. There was no significant difference among the other grades. As for the motivation dimension, the lowest level was in Grade 1 and the highest was in Grade 2. Significant difference was shown between Grade 1 and Grade 3, Grade 1 and Grade 4 (Grade 1< Grade 3, Grade 1< Grade 4). No significant difference was found among other groups. Vigor and concentration dimensions were demonstrated striking similarities, both the lowest were in Grade 2, and there were significant differences between Grade 2 and Grade 1, 3 and 4 (Grade 2 < Grade 1, 3 and 4). No significant difference was found among other groups. Academic self-efficacy and its two dimensions did not show significant difference among grade groups.

Table 3. Test of grade differences in learning engagement, academic self-efficacy and each dimension

Factor	Grade 1		Grade 2		Grade 3		Grade 4		F	p
	M	SD	M	SD	M	SD	M	SD		
Learning engagement	3.62	0.73	3.51	0.68	3.67	0.83	3.72	0.73	3.34	0.02*
Motivation	1.76	0.51	1.84	0.50	1.83	0.54	1.81	0.49	2.66	0.05*
Vigor	4.52	1.18	4.30	1.07	4.57	1.32	4.65	1.18	4.11	0.00*
Concentration	4.58	1.16	4.40	1.09	4.60	1.29	4.69	1.15	2.75	0.04*
Academic self-efficacy	3.27	0.80	3.16	0.75	3.21	0.82	3.31	0.87	1.83	0.14
Learning ability efficacy	3.25	0.84	3.14	0.82	3.20	0.86	3.31	0.92	1.58	0.19
Learning behavior efficacy	3.29	0.82	3.17	0.75	3.22	0.83	3.31	0.89	1.93	0.12

**p < 0.01, *p < 0.05

2.3 Differences in academic level

Students with different academic levels had significant differences in their learning engagement and academic self-efficacy (Table 4). The LSD pairings comparison test showed that the students in the last 20% of the academic ranking had the lowest learning input, and the difference was significant with other academic levels

respectively. That is, the students with high achievement level were significantly more engaged in learning than those with low achievement levels. In terms of academic self-efficacy, there were significant pair-to-pair differences in all levels except the latter 20% and 61-80%, 61-80% and 41%-60% groups.

Table 4. Test of academic level differences in learning engagement, academic self-efficacy and each dimension

Factor	Last 20%		61%-80%		41%-60%		21%-40%		20%		F	p
	M	SD	M	SD	M	SD	M	SD	M	SD		
Learning engagement	3.10	0.93	3.62	0.86	3.51	0.68	3.65	0.66	4.00	0.77	25.01	0.00
Motivation	1.86	0.59	1.88	0.56	1.81	0.49	1.74	0.50	1.71	0.55	3.86	0.00
Vigor	3.67	1.36	4.47	1.35	4.32	1.09	4.58	1.06	5.14	1.27	27.16	0.00
Concentration	3.75	1.36	4.51	1.32	4.40	1.07	4.62	1.05	5.15	1.28	23.71	0.00
Academic self-efficacy	2.80	0.88	3.09	0.83	3.16	0.74	3.34	0.80	3.57	0.88	17.67	0.00
Learning ability efficacy	2.77	0.91	3.06	0.86	3.14	0.79	3.33	0.83	3.58	0.92	17.86	0.00
Learning behavior efficacy	2.84	0.92	3.12	0.86	3.17	0.74	3.36	0.81	3.57	0.90	15.19	0.00

*p < 0.05

3. CORRELATION ANALYSIS

Table 5 shows that learning engagement and its dimensions were significantly positively correlated with academic level. Learning engagement and its dimensions are significantly correlated with academic self-efficacy and its dimensions. Learning engagement and its dimensions were also significantly related to academic level. Academic self-efficacy and its dimensions were also significantly positively correlated with academic level.

Table 5. Correlation analysis of learning engagement, academic self-efficacy and academic achievement (ANOVA TEST)

Variable	1	2	3	4	5	6	7	8
1.Academic achievement point	1							
2. Learning engagement	.22**	1						
3.Motivationn	.29**	.93**	1					
4.Vigor	.22**	.97**	.83**	1				
5.Concentration	.21**	.97**	.83**	.95**	1			
6. Self-Efficacy of Academic	.21**	.56**	.52**	.55**	.53**	1		
7. Efficacy in learning ability	.21**	.53**	.50**	.52**	.5**	.97**	1	
8. Efficacy in Learning behavior	.19**	.55**	.50**	.54**	.52**	.96**	.87**	1

*p < 0.05, **p <0.01

4. MEDIATING TEST OF ACADEMIC SELF-EFFICACY

Bootstrap method was adopted, Model 4 was selected (Model 4 was a simple intermediary model), and 5000 self-drawn tests were carried out to test the intermediary effect. The results of the mediation model (Table 6) showed that the direct prediction effect of learning engagement on academic achievement (β=0.262, p<0.01) was significant. Meanwhile, learning engagement positively predicted college students' academic self-efficacy (β=0.556, p<0.01). When both learning engagement and academic self-efficacy were included in the regression equation, academic self-efficacy could also significantly and positively predict academic achievement (β=0.156, p<0.01), and the Bootstrap confidence interval of the intermediary effect size did not contain 0 (0.047, 0.127), as shown in Table 7.

Table 6. Test of the mediating model of academic efficacy

variable	Model1：Academic achievement		Model 2：Academic efficacy		Model 3：Academic achievement	
	β	t	β	t	β	t
Learning engagement	0.262	8.289**	0.556	23.226**	0.175	4.793**
Academic self-efficacy					0.156	4.608**
R^2	0.0437		0.264		0.057	
F	68.704**		539.468**		45.428	

Notes: *p < 0.05, **p <0.01

Model 1: Learning engagement predicts academic achievement;

Model 2: Learning engagement predicts academic efficacy;

Model 3: Learning engagement and academic efficacy co-predict academic achievement.

Table 7. An analysis of effect of mediating on academic self-efficacy.

	Effect value	**Standard error**	**Bootstrap 95% CI**		**Ratio of total effect**
			Lower limit	**Upper limit**	
Total effect	0.262	0.032	0.200	0.324	
Direct effect	0.324	0.037	0.104	0.247	
Indirect effect	0.087	0.021	0.047	0.127	0.331

Academic self-efficacy had a significant and considerable mediating effect on the relationship among learning engagement and academic achievement, which was part of the mediating effect. According to the analysis results of mediating effect, the mediating effect accounted for 33.1% of the total effect. The specific path coefficients between variables in this study were shown in Figure 2.

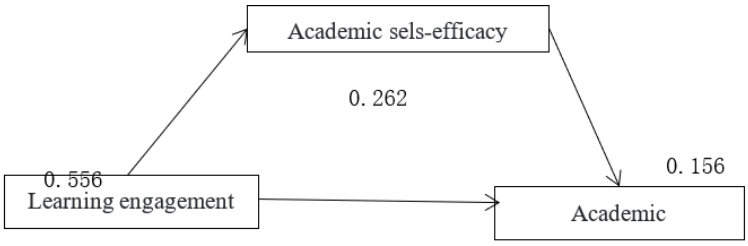

FIGURE 2. The mediating role of academic self-efficacy on the relationship between learning engagement and academic achievement

The total score and dimensions of learning engagement are significantly positively correlated with academic self-efficacy and dimensions. The results of regression analysis show that learning engagement can effectively predict academic self-efficacy, and the F-value of this regression equation reaches the significance level, and learning engagement can be used to explain the variation of academic self-efficacy. Its overall coefficient of determination (after correction) was 0.262, indicating that learning engagement explained 26.2% of the variation in academic self-efficacy. Among the three dimensions of learning engagement, vigor and concentration have extremely significant predictive power on learning ability efficacy and learning behavior efficacy ($p< 0.001$), concentration has no significant predictive power on learning ability efficacy, but has significant predictive power on learning behavior self-efficacy ($p < 0.01$). Vigor, dedication and concentration can explain 41.7% of the variation of self-efficacy dimension of learning ability and 30.8% of the variation of self-efficacy dimension of learning behavior. Academic self-efficacy has a significant positive effect on academic achievement.

V. DISCUSSION

Present study attempts to examine the relationship between learning engagement and academic self-efficacy on academic achievement and further explore the mediating effect of academic self-efficacy on this association among university students. The findings demonstrated a significant positive association among learning engagement, academic self-efficacy, and academic achievement, which is in agreement with the findings of Dogan [28] in Turkish education system and Askari et al. [29] which conducted with similar method for Iranian gifted students. Regression analysis revealed that learning engagement has a direct impact on academic achievement, and academic self-efficacy has a mediating effect on academic achievement. The findings supported H2, H3 and H4.

The results of this study partly supported H1 and identified that the overall current status of learning engagement and academic self-efficacy are at the medium or lower level. Especially, the mean score of dedication dimension was only 1.79, far below the median 4, indicating that normal university students' dedication is very lacking and needs to be improved. This medium-level finding is consistent with some recent research results. Cui Wenqin [30] investigated the learning engagement from 1034 college students and found that the overall level of college students' learning engagement was below the medium level. Lin [31] conducted a questionnaire survey on 557 college students and also found that the scores of each factor of college students' learning engagement were at a moderate level. At the same time, the overall level of academic self-efficacy is also at an average level, indicating that the overall level of academic self-efficacy of students in this local normal university is not high. This is related to their own ability, the difference of students' origin areas, different family environment, parenting style and school training. This local normal school is a second-class undergraduate institution, in which most of the students come from the rural areas of Jiangxi Province, and their family settings are not very good. Because their scores of College Entrance Examination are not very high, they have to choose to study in this

normal college. They lack learning dedication, enthusiasm, the awareness of their own career planning and career growth, and learning investment and learning confidence are low. In order to implement the training objectives of normal university and improve their training level, the college should take active actions to improve students' learning involvement and academic self-efficacy, so as to promote the improvement of their academic level.

Research results supports there are significant differences in learning engagement in grade and academic level. Learning engagement is significantly different between different grades, and Grade 2 is the lowest, which is significantly different from the freshmen, junior and senior respectively. This indicates that the second year is in the learning slack period. And during this period, college administrators and counselors should consider strengthening students' professional cognition and career planning, promote the students to establish career goals as soon as possible and stimulate dedication. On the other hand, academic self-efficacy and its two dimensions did not show significant difference among grade groups, which may be due to the stability of academic self-efficacy.

Additionally, there are significant differences in learning engagement and academic self-efficacy among students with different achievement levels. The research result shows that higher the academic level, the higher the scores of learning engagement and academic self-efficacy. That is, students with high achievement level have higher level of learning engagement and academic self-efficacy than those with low achievement level. This indicates the interaction between achievement level and learning engagement, achievement level and academic self-efficacy. Bandura et al., through a large number of studies, proposed that the most important information source for the formation of self-efficacy is the experience of past behavior success or failure. Because the past behavior experience of students with high level is mostly successful experience. Compared with their classmates, they have mastered more complex skills and, as a result, are more confident when facing with the same tasks.

While the result demonstrates that college students' learning engagement, academic self-efficacy and their dimensions are not significantly different between gender. This is inconsistent with some previous research results, which may be due to the special male-female ratio in normal colleges. The majority of normal college students in our school are female students, accounting for nearly 2/3 of the total, so the results basically represent the situation of female students.

Pearson correlation analysis results demonstrated the higher the level of learning engagement, the better the academic performance of normal school students. This indicates that normal students' learning engagement is significantly positively correlated with academic performance. This finding is consistent with previous researches.

There are good and strong correlations between learning engagement, academic self-efficacy and academic achievement. Our results strongly supported the correlation among the three variables, supporting H2. The current study found that learning engagement is significantly positively correlated with academic self-efficacy. Academic self-efficacy also showed a significant positive correlation with academic achievement, this is quite consistent with previous researches. Honicke & Broadbent [32] found that academic self-efficacy has a predictive effect on the emotional, behavioral and cognitive dimensions of college students' learning engagement. College students with higher academic self-efficacy are more active in learning, more able to focus on learning tasks, and comprehensively apply a variety of learning methods and strategies in learning activities. This finding indicates that the improvement of learning engagement and academic self-efficacy can significantly promote the improvement of academic performance.

Present regression analysis supported that learning engagement has a direct impact on academic achievement (supporting H3), and academic self-efficacy has a mediating effect on academic achievement (supporting H4). Previous studies have found that college students' academic self-efficacy can directly predict academic

achievement, and it can also indirectly predict academic achievement through the mediating effect. Students with higher academic self-efficacy may trigger more learning engagement because they believe they can successfully complete an academic task, which, in turn, affects their academic performance.

VI. CONCLUSION

This study attempted to investigate the current situation of learning engagement and academic efficacy of normal students in Shangrao Normal University, and whether students' learning engagement and academic self-efficacy produce excellent academic achievement. The research results confirmed the significant correlation between students' learning engagement, academic self-efficacy, and academic achievement; learning engagement has a direct impact on academic achievement, meanwhile academic self-efficacy mediates the relationship between learning engagement and academic achievement.

The conclusions of this study have a variety of implication for educators, counselors, and students of normal universities.

First of all, the overall current status analysis demonstrated that the learning engagement of normal university students needs to be improved urgently, which is related to the quality of compulsory education in the region. This also affects the quality of the country's future rural teachers. By optimizing the training mode and improving the comprehensive evaluation system, we can promote normal students' cognition of future careers, enhance professional knowledge and skills, establish academic support mechanism, and promote high-quality learning input of normal students. Secondly, it should stimulate encouraging the innovation of the educational atmosphere, and provide students with more practical guidance and encouragement, as well as more successful experiences and opportunities for observation and learning to enhance their sense of self-efficacy, so as to better promote learning input and further improve academic performance. From the perspective of lifelong learning, it is equally important for students to have positive emotional experiences in learning for their future learning and development.

Finally, as for the students lack academic confidence, psychological centers and counselors in colleges and universities carry out cognitive-behavior group counseling to help them. Driven and facilitated by the power of the interactive field, the participants can reduce the sense of inferiority, overcome the fear of feeling and enhance the ability of introspection and self-efficacy.

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Conflict of Interests

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