A Study on the Influence of Academic Self-Efficacy and Learning Engagement on Academic Performance among English Educational College Major Students

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Abstract: The purpose of this study was to identify the relationship among English educational major college students' self-efficacy, learning engagement and academic performance, and to identify the mechanisms of academic self-efficacy and learning engagement on academic performance, so as to provide data support for improving the academic performance of English educational major college students, and to help them improve their academic self-efficacy and learning engagement. In this study, 460 questionnaires were distributed to English educational major college students in Normal universities directly under Guangxi Zhuang Autonomous Region, China, and 320 were validly returned. Statistical analysis, correlation analysis and regression analysis were conducted on the data using SPSS25.0 program. Academic self-efficacy has a direct effect on both academic performance and learning engagement of college students. Learning engagement and its three sub-dimensions all have a direct effect on college students' academic performance. Learning engagement partially mediates the mechanism by which academic self-efficacy affects academic performance. In order to improve the academic performance of English education undergraduates, attention must be paid to the development of academic self-efficacy and commitment to learning.

1. Introduction

1.1 Necessity and Purpose of the Study

The academic performance of English educational majors is crucial to their future study, work and life, especially the academic performance related to their majors. Moreover, the academic performance at this stage is not only a valid indicator of students' mastery of learning contents, but also concerns students' future development and life planning. Therefore, in order to help students improve their academic performance, research on students' education has received more and more

attention, especially the relationship between students' learning psychology and academic performance, and more researchers have begun to investigate the factors that can affect students' academic performance beyond teachers' teaching and learning methods, such as learning stress, learning engagement, personality traits, and academic burnout, etc. Bandura (1977) suggested that self-efficacy affects individuals' behavioral performance in terms of behavioral choices, effort and persistence, coping styles, and emotional responses. When the level of self-efficacy is high, individuals will actively and positively overcome difficulties, while on the contrary, they will choose to adopt a negative and avoiding way of coping. Self-efficacy is expressed in academic terms as academic self-efficacy, which refers to students' judgment of whether they can successfully complete their learning tasks and achieve their desired learning goals, and it affects students' learning process and academic performance, which in turn affects academic achievement (Bandura, 1982).

Schunk (1982) found that students with high academic self-efficacy were more motivated to engage in challenging learning tasks, set higher goals for their academic achievement, put more effort and persistence into accomplishing these goals, and had more positive attitudes and emotions and less anxiety in academic situations. Jinks and Morgan (1994) studied the correlation between academic self-efficacy and academic achievement among different types of students in urban, suburban, and rural areas and found a significant correlation between the two. Britner & Pajares' (2006) study indicated that students' academic self-efficacy was predictive of students' course selection, academic realities, and academic achievement. In his study, Wu Shuang (2012) discussed that academic self-efficacy can have a significant impact on students' achievement goals, which in turn affects students' academic achievement. Huo Hongxia (2018) stated that there is a significant positive relationship between students' academic self-efficacy and academic achievement. In summary, students' academic self-efficacy has a predictive effect on students' academic achievement; therefore, it is necessary to improve students' academic self-efficacy.

At the same time, the main task of students in college is learning, and their level of commitment to learning directly affects their academic performance (Seo Sunghee, 2017). For a long time, people tend to see college students' learning as only the acquisition of knowledge and skills and pay less attention to how students can learn to learn and become masters of learning. In industrialized societies, the main responsibility of school education is to provide students with formal education in the classroom and to learn the skills they need for their future careers in order to meet the needs of heavy industry and manufacturing. Learning has become a matter of outcomes rather than a process. As a result, the process of learning places more emphasis on the completion of the outcome than on the pleasure and satisfaction of the learning process, which ultimately leads to an achievements in the educational scene and creates severe academic stress on learners due to academic achievement (Seo Sunghee, 2017). In the learning process, there is no understanding of the process, and learning is accomplished by external incentives such as obtaining high academic grades, appreciation of learning outcomes from teachers or parents, and competition with peers. Learners who do not enjoy the process of completing the task itself feel more difficult, and, if learning is done with the extrinsic motivation generated by such external rewards, this can create pressure on learners to maintain excellence in learning, thus preventing challenging learning (Kohn, 1993). Thus, university education needs to teach students how to educate themselves throughout their lives so that they can become skilled learners who can adapt to the future. The hopes and future of individuals and the societies in which they live rest on their ability to renew themselves. Individual self-education and self-renewal are predicated on a good sense of personal learning self-efficacy. The acquisition of good learning self-efficacy and the ability to self-regulate learning is the permanent guide for students to successfully move forward in an increasingly learning society.

In response to the learner's inability to enjoy the learning process, the learner needs to create

conditions that allow him or her to immerse himself or herself in the process of learning, rather than to achieve the achievement itself, thereby increasing intrinsic motivation and, consequently, achievement. In this case, engagement is considered the ultimate stage of intrinsic motivation, which can be used to provide the optimal psychological state that enables the learner to happily complete the learning process itself.

When learners experience this kind of engagement in the learning environment, they are fully engaged in learning, resulting in a rewarding and enjoyable experience in the learning environment, an experience that gives learners a sense of satisfaction, joy, and accomplishment. This ultimately increases learners' satisfaction and pride in the overall learning process (Shi Inbok, 2007). If learners experience engagement in an academic situation, even without other external factors, completing the task itself will give them pleasure and enable learning to continue. In addition, an experience of engagement in learning provides new discoveries that learners perceive in the learning process, so learners feel pleasure and accomplishment in the process itself, and this learning engagement also shows a high positive correlation with academic achievement (So Yeonhee, 2011; LeeSookjung, 2011; Lee Jihye, 2010), that is, learning engagement has a positive effect on increasing academic achievement because students do not learn for the sake of outcomes, but rather enrich the learning process through intrinsic motivation, which naturally leads to higher achievement.

English educational major undergraduates tend to ignore these endogenous drivers in the complex learning process of second language acquisition, which leads to poor learning outcomes. Some researchers have found that despite the fact that second language learners use the same native language and have roughly the same learning environment and communicative needs, there are significant differences in the rate and degree of second language acquisition, and only a very small number of second language learners approach the level of native speakers (Ellis, 2004). In the 1970s, scholars (Carroll, 1963; Stern, 1975; Rubin, 1975) began to focus on the learning process of successful second language learners and found that in addition to a certain amount of linguistic talent and positive motivation, learner engagement also played an important predictive role. There is now a general consensus among scholars that learner factors such as linguistic ability, learning engagement, learning strategies, and cognitive style play an important role in predicting second language learners' academic achievement (Dornyei, 2005 b; McDonough, 2009; Wen, 2001; Gao, 2004; Wang, 2008, etc.). Learning efficacy is an important variable in whether students can achieve good academic performance and ensure their psychological health and healthy development throughout their lives, and starting with enhancing students' learning efficacy can improve their academic performance and allow them to learn and grow healthily, confidently, and happily (Bian Yufang, 2003). Academic self-efficacy mediates between knowledge, skills, and behavior and is an important motivator of students' learning behavior (Pintrich, 1990). In his study, Youguo Liao (2010) stated that academic self-efficacy provides a positive predictive effect for learning engagement. In a study by Li Weili(2012), it was shown that students with high academic self-efficacy were more likely to engage in challenging learning tasks, and the two reinforced each other. In a study by Shen Yongjiang, Jiang Dongmei, and Shi Leshan (2014), it was found that the level of academic self-efficacy influenced students' engagement in learning. The study of Zhu, Haideng, Yao and Xiaoxue (2015) showed that academic self-efficacy significantly predicted learning engagement.

The goal of education is not only to enable students to acquire certain competencies, but also to develop the "motivation" that will enable them to acquire competencies throughout their lives, and to give them the motivation and sense of efficacy to learn. Therefore, in order to explore ways to improve the academic performance of English educational majors, we wanted to understand how academic self-efficacy and learning engagement affect academic performance. By compiling the literature, we found that most of the previous studies investigated the status of secondary school

students' academic self-efficacy, learning engagement, and academic achievement, while relatively few studies investigated college students, and no studies investigated college students majoring in English education. Alternatively, most studies only studied the relationship between the two variables, so this study investigates the relationship among the three variables of academic self-efficacy, learning engagement and academic achievement among college students majoring in English education, aiming to reveal the potential mechanisms by which academic self-efficacy and learning engagement affect academic achievement.

1.2 Research Questions

In order to achieve the above research objectives, the following research questions are proposed in this study:

Research Question 1: What is the effect of academic self-efficacy on academic achievement among English educational major undergraduates?

Research Question 2: What is the impact of English educational major undergraduates' study engagement on academic performance?

Research Question 3: Does learning engagement play a mediating role in the mechanism by which academic self-efficacy and learning engagement affect academic performance?

2. Research Methodology

2.1 Research Object

Table 1 Statistical table of demographic variables

Variables	Category	Count	Column N %
Gender	Male	48	15.0%
	Female	272	85.0%
Grade	Freshman year	42	13.1%
	Sophomore	79	24.7%
	Junior	109	34.1%
	Senior Year	90	28.1%
Home Location	Rural	254	79.4%
	City	66	20.6%
Siblings	Yes	266	83.1%
	No	54	16.9%
Family economic level	High	12	3.8%
	Upper middle	63	19.6%
	Medium	165	51.7%
	Lower Middle	64	20.1%
	Low	16	4.8%
Academic Performance Ranking	High	14	4.5%
	Upper middle	61	19.0%
	Medium	173	54.0%
	Lower Middle	59	18.3%
	Low	13	4.2%

This study was conducted with undergraduate students of English educational majors at Normal universities directly under the Guangxi Zhuang Autonomous Region, China, after obtaining

approval from the Research Ethics Review Board (SHU: 2020). The survey was administered to 460 undergraduate students over a five-day period from September 19 to 23, 2021, through 280 offline engagements (in classrooms after school) or 180 online engagements (on the school's Internet survey network). There was only one choice between offline and online participation, and participation in the survey was requested only once. Information about participation in the study was provided before the survey began and before they were asked for their consent, and survey participants could withdraw from the survey at any time if they felt any discomfort. The data collected did not include information that could identify individuals. A total of 340 questionnaires were collected, of which 120 were dropped because they were from students who did not answer truthfully or refused to participate in the questionnaire. Finally, after excluding 20 questionnaires with irregular responses, a total of 320 questionnaires were selected for analysis in this study.

As can be seen from <Table 1>, the subjects of this survey were analyzed according to the demographic characteristics of the results. Among them, in terms of gender, due to the characteristics of English education as a discipline, the employment direction is relatively narrow, and there are more employment opportunities for women than men; therefore, 48 men (15.0%); 272 women (85.0%), women have an absolute numerical advantage over men.

2.2 Measuring Tools

2.2.1 Academic Self-Efficacy

The Student Self-Efficacy Scale (SSE; Rowbotham & Schmitz, 2013) is the current academic self-efficacy assessment used in the survey. The Self-Efficacy Scale was designed to measure students' self-efficacy in relation to academic coursework in a university setting. This scale was developed based on the Faculty Self-Efficacy Scale (Schmitz & Schwarzer, 2000), which encompasses the following four areas of academic challenges that students frequently encounter: academic performance, skills/knowledge, social interactions with faculty, and coping with academic stress (Rowbotham & Schmitz, 2013).

2.2.2 Learning Engagement

This study used the "College Student Learning Engagement Inventory" developed by Liao Youguo(2011), which consists of 20 questions divided into three dimensions: cognitive engagement, affective engagement, and behavioral engagement. Cognitive engagement is mainly examined from the perspective of learning strategies, which involves the use of cognitive strategies, metacognitive strategies and resource management strategies in the learning activities of college students; affective engagement mainly involves the positive emotional experiences of college students in the learning process, such as pride and happiness; behavioral engagement mainly considers the performance of college students in class, participation in learning outside of class and participation in professional practice. The scale is rated on a 5-point Likert scale, and the mean score of the total questionnaire is obtained by adding up the total scores of all the questions and dividing them by the total number of questions, and the higher the total mean score indicates that the individual is more engaged in learning overall.

2.2.3 Academic Achievement

This study will use the combined grades of English education undergraduates in each ma jor course in the most recent academic year as the measure.

Table 2 Reliability analysis of each scale

Dimensions	α	Number of items
Learning engagement	0.924	20
Cognitive engagement	0.904	7
Affective engagement	0.892	7
Behavioral engagement	0.858	6
Self-efficacy	0.822	10

As can be seen from the above table, the reliability coefficients of each dimension of learning engagement, cognitive engagement, emotional engagement and behavioral engagement and self-efficacy are greater than 0.7, implying good reliability of each dimension.

2.3 Analysis Method

The data from this study were statistically analyzed using the SPSS 25.0 program as follows:

First, to determine the credibility of the scales used in the study, the internal fit (Cronbach's α) was calculated at each scale. Second, to understand the general characteristics of the study population, frequency analysis was conducted, and to understand the level of the study variables, descriptive statistics analysis was conducted. Third, Pearson's correlation analysis (Pearson's correlation) was conducted in order to understand the interrelationships between the study variables. Fourth, Simple regression analysis (SRA) was conducted to examine the effects between academic self-efficacy, academic engagement, and academic achievement.

3. Research Results

3.1 Correlation Analysis between the Main Variables

To determine the interrelationships between the variables in this study, Pearson's correlation analysis was performed, as shown in Table 3.

Table 3 Correlation analysis of learning engagement and each sub-dimension with academic self-efficacy and academic achievement

		LE	CE	AE	BE	SE	AA
LearningEngagement	Pearson Correlation	1					
(LE)	Significance (two-tailed)						
Cognitive Engagement	Pearson Correlation	.900 **	1				
(CE)	Significance (two-tailed)	.000					
Affective Engagement	Pearson Correlation	.905 **	.758 **	1			
(AE)	Significance (two-tailed)	.000	.000				
Behavioral Engagement	Pearson Correlation	.578 **	.306 **	.322 **	1		
(BE)	Significance (two-tailed)	.000	.000	.000			
Self-Efficacy	Pearson Correlation	.673 **	.633 **	.464 **	.579 **	1	
(SE)	Significance	.000	.000	.000	.000		
	(two-tailed)						
Academic Achievement	Pearson Correlation	.471 **	.457 **	.359 **	.328 **	.408 **	1
(AA)	Significance (two-tailed)	.000	.000	.000	.000	.000	

The above table shows that there is a significant positive correlation between learning engagement, cognitive engagement, affective engagement and behavioral engagement and

self-efficacy, and academic achievement with correlation coefficients ranging from 0.32 to 0.91.

3.2 Regression Analysis of Academic Self-Efficacy, Learning Engagement, and Academic Achievement

This study used regression analysis to analyze the degree of influence between the different variables, mainly by forming a representation of the regression equation to describe and reflect this influence relationship, as shown in < Table 4>.

Table 4 Regression analysis of academic self-efficacy, learning engagement, and academic achievement

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	5. 2	F	p
		В	Std. Error	Beta					
Academic	(Constant)	1.241	.253		4.900	.000	0.166	63.334	0.000
Achievement	Self-efficacy	.596	.075	.408	7.958	.000			
Learning	(Constant)	1.110	.135		8.234	.000	0.453	63.067	0.000
Engagement	Self-efficacy	.646	.040	.673	16.219	.000			
Academic	(Constant)	.633	.267		2.369	.018	0.237	49.219	0.000
Achievement	Self-efficacy	.242	.097	.165	2.494	.013			
	Learning Engagement	.548	.101	.360	5.426	.000			

From the above table, it is clear that self-efficacy can significantly and positively affect academic performance (β =0.408, p<0.001). Self-efficacy can significantly and positively affect learning engagement (β =0.673, p<0.001). Self-efficacy can significantly and positively affect academic achievement (β =0.165, p<0.05) and learning engagement can significantly and positively affect academic achievement (β =0.360, p<0.001). In summary, the findings suggest that learning engagement partially mediates the relationship between self-efficacy and academic achievement.

Table 5 Regression analysis of academic self-efficacy, cognitive engagement, and academic achievement

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	2	F	p
		В	Std. Error	Beta					
Academic	(Constant)	.971	.249		3.900	.000	0.232	47.944	0.000
Achievement	Self-efficacy	.289	.093	.198	3.109	.002			
	Cognitive Engagement	.384	.074	.332	5.226	.000			

From the above table, it is clear that self-efficacy can significantly and positively affect academic achievement (β =0.198, p<0.01) and cognitive engagement can significantly and positively affect academic achievement (β =0.332, p<0.001). The findings suggest that cognitive engagement partially mediates the relationship between self-efficacy and academic achievement.

Table 6 Regression analysis of academic self-efficacy, affective engagement, and academic achievement

Model		Unstar Coeffi	ndardized cients	Standardized Coefficients	t	Sig.	2	F	p
		В	Std. Error	Beta					
Academic	(Constant)	.889	.265		3.358	.001	0.203	40.323	0.000
Achievement	Self-efficacy	.449	.083	.307	5.425	.000			
	Affective	.249	.065	.216	3.821	.000			
	engagement								

From the above table, it is clear that self-efficacy can significantly and positively affect academic achievement (β =0.307, p<0.01) and affective engagement can significantly and positively affect academic achievement (β =0.216, p<0.001). The findings suggest that affective engagement plays a partially mediating role between self-efficacy and academic achievement.

Table 7 Regression analysis of academic self-efficacy, behavioral engagement, and academic achievement

Model			ndardized cients	Standardized Coefficients	t	Sig.	2	F	p
		В	Std. Error	Beta					
Academic	(Constant)	.971	.279		3.476	.001	0.179	34.536	0.000
Achievement	Self-efficacy	.479	.091	.327	5.243	.000			
	Behavioral	.220	.099	.139	2.225	.027			
	Engagement								

From the above table, it is clear that self-efficacy can significantly and positively affect academic achievement (β =0.327, p<0.001) and behavioral engagement can significantly and positively affect academic achievement (β =0.139, p<0.05). The findings suggest that behavioral engagement partially mediates the relationship between self-efficacy and academic achievement.

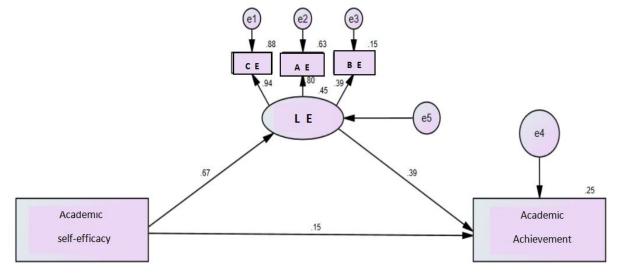


Fig.1 Discussion and Recommendations

This study examined the relationship among academic self-efficacy, learning engagement, and academic performance among college students majoring in English education. From the results, it was found that both academic self-efficacy and learning engagement showed significant predictive effects on academic achievement, and higher academic self-efficacy and learning engagement tended to predict better academic achievement performance. This result is consistent with previous

studies (Huang Weili, 2012; Tai Sihang, 2017). Students with high self-efficacy are more likely to have more confidence in their learning, tend to be more rational when they encounter difficulties, have more perseverance and tenacity, and believe that they can solve problems better when they are faced with employment pressure and a high-intensity learning environment during college. In contrast, students with low self-efficacy tend to underestimate their own abilities, choose to avoid difficulties, and are more likely to be frustrated and emotional, which can affect their academic performance. Therefore, students with high self-efficacy will perform better on academic tests.

The results of this study showed that college students' learning engagement has a significant positive effect on academic performance, i.e., the higher the level of learning engagement, the higher their academic performance, and conversely, the lower the level of college students' learning engagement, the worse their academic performance will be. Further analysis revealed that all three dimensions of learning engagement have a positive predictive effect on academic performance, and their predictive power is in descending order: cognitive engagement, affective engagement, and behavioral engagement. This finding has been confirmed in related studies by previous scholars. Wang Shu (2009) conducted a survey study with a sample of research university students and showed that college students' learning engagement had a significant effect on academic gains. In an empirical study, Wang Yashuang(2015) found that learning engagement has a positive effect on learning gains and that its factors have different effects on learning gains. College students who invest more time and effort in the learning process, pay more attention to understanding, thinking, analyzing and applying knowledge, read and write more actively, communicate and cooperate with teachers and classmates more actively, communicate and cooperate with people from different backgrounds, and use different learning media more adeptly, also have better academic performance.

This study investigated the role of learning engagement between academic self-efficacy and academic achievement among college students majoring in English education, and found that students' learning engagement and their scores on each sub-dimension showed a significant positive correlation with academic achievement. The results of the correlation analysis showed that there was a significant positive correlation between academic commitment, academic self-efficacy and academic achievement. The structural equation model was used to test the hypothesis of the relationship between them, and it was found that it was the academic engagement that partially mediated the relationship between academic self-efficacy and academic achievement. This suggests that academic self-efficacy has a facilitative effect on student achievement and that the sub-dimension of learning engagement can further enhance this facilitative effect, or that high academic self-efficacy can help improve students' academic achievement, and that the addition of higher learning engagement can be more effective in improving students' academic achievement. Although previous studies have also shown that academic self-efficacy affects college students' academic performance, our study also found that the addition of the sub-dimensions of academic engagement undoubtedly has an added effect on college students' academic performance. This suggests that academic self-efficacy does not affect academic performance in an absolute way, but rather indirectly through other means, such as engagement in learning, motivation, and commitment to learning.

Therefore, the present study concludes that learning engagement mediates the relationship between academic self-efficacy and academic performance, which suggests that the effect of academic self-efficacy on academic performance works primarily through an intrinsic mechanism that affects learning engagement. That is, academic self-efficacy influences academic performance by affecting students' learning engagement. To a certain extent, this also indicates that students with high self-efficacy tend to have more confidence in their academic performance and invest more time and energy in their studies. Even when they encounter difficulties in their studies, students

with high academic self-efficacy tend to actively deal with the problems, find ways to break through the difficulties, and effectively solve the problems, thus improving their academic performance. Of course, good academic performance will, to a certain extent, increase students' self-efficacy, thus forming a virtuous cycle in which academic self-efficacy increases commitment to learning, which in turn promotes academic performance and generates higher academic self-efficacy. Of course, this needs to be further validated in the future. Therefore, for the improvement of students' academic performance, it is important to focus on the role of intrinsic psychological motivation, such as self-efficacy of students' learning ability and self-efficacy of learning behavior, as well as students' engagement in learning, including various aspects such as cognitive engagement, emotional engagement, and behavioral engagement. The factors affecting students' academic performance are examined comprehensively, and intervention mechanisms to improve students' academic performance are explored from multiple perspectives.

Of course, there are shortcomings in this study. Firstly, there are certain limitations in sample selection, which is mainly selected from one region, and in the further studies more representative groups from different universities in different provinces and cities can be selected to further improve the study of the relationship among academic self-efficacy, learning engagement and academic achievement of college students majoring in English education. Secondly, this study only examines the relationship among academic self-efficacy, learning engagement and academic achievement of college students in different grades, so it lacked longitudinal tracking analysis, therefore, in the further research, accuracy, stability and continuity of the model of the relationship among the three from the perspective of longitudinal analysis can be verified.

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