

# Relationship Between Time Management Disposition and Learning Burnout Among Undergraduates in Medical University: Mediating Effect of Academic Self-Efficacy

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**Abstract**—The objective of this paper is to explore the relationship between the time management disposition, academic self-efficacy and learning burnout among undergraduates in the medical university. Adolescence Time Management Disposition Inventory (ATMDI), Academic Self-Efficacy Scale (ASES), Learning Burnout of Undergraduates Scale (LBUS) and a self-edited questionnaire on the general information were administered to 772 undergraduate who were selected by stratified random sampling from a medical university. The results showed that: (1) the total score of ATMDI ( $114.1 \pm 19.5$ ) was at the middle level, as well as the total score of ASES ( $73.1 \pm 10.9$ ) and LBUS ( $61.8 \pm 8.6$ ); (2) correlation analysis showed that there was a significant pairwise correlation among the total score of ATMDI, ASES and LBUS ( $r = 0.298 - 0.585, P < 0.01$ ); (3) the total score of ASES had a partly mediating effect in the relationship between the total score of ATMDI and the total score of LBUS. Finally this paper drew a conclusion: time management disposition not only has a direct role on the learning burnout in the undergraduates in the medical university, but also indirectly influences it through academic self-efficacy.

**Keywords**—undergraduates, academic self-efficacy, learning burnout, time management disposition, mediating effect

## I. INTRODUCTION

Time management Disposition is a stable personality trait that refers to the planning and control activities that individuals perform to make effective use of time resources. The goal is to move individuals from passive, natural use of time to active, systematic, purposeful, planned distribution and use of time to work efficiently and creatively. Good time management disposition can stimulate undergraduates' motivation, reduce academic

delay, increase learning input, promote independent learning, and improve academic performance [1-4].

Learning burnout refers to individuals feel frustrated, tired, depressed or tired due to lack of motivation or interest in learning, resulting in a series of behaviors that evade learning. Learning burnout is a common learning problem among undergraduates. The foreign detection rate is 9.9 to 40.3% [5-6], and the domestic detection rate is 24.8 to 51.3% [7-8]. Learning burnout reduces the individual's enthusiasm for learning [9], leading to physical and mental fatigue [10] and psychological syndrome [11], which hinders academic and professional development [12-13].

Academic self-efficacy refers to whether individuals have the belief to adopt adaptive behavior when they encounter challenges in learning [14]. Individuals with high academic self-efficacy have the belief that they can handle the various challenges in learning, and are more proactive in learning. Insufficient self-confidence in learning among individuals with low academic self-efficacy will result in greater learning pressure and learning anxiety, loss of fun and sense of accomplishment from learning, but boredom, depression or frustration.

Previous studies have found that there is a significant pairwise correlation between time management disposition, academic self-efficacy and learning burnout: time management disposition is the cause of academic self-efficacy [15]. There is a significant negative correlation between academic self-efficacy and learning burnout, as well as between time management disposition and learning burnout [16-17]. On the other hand, learning burnout manifests itself as a series of explicit behavioral and emotional responses, which is outcome variable; time management disposition is personality trait, which is remote variable, and academic self-efficacy is an inner experience of learning challenges, which is near-end variable, time management disposition shall be subject to the mediating effect of academic self-efficacy, thus we can assume that academic self-efficacy plays a mediating role

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in the relationship between time management disposition and learning burnout (as shown in Figure 1). This paper intends to validate this hypothesis by taking undergraduates in medical university with heavy learning task as examples.

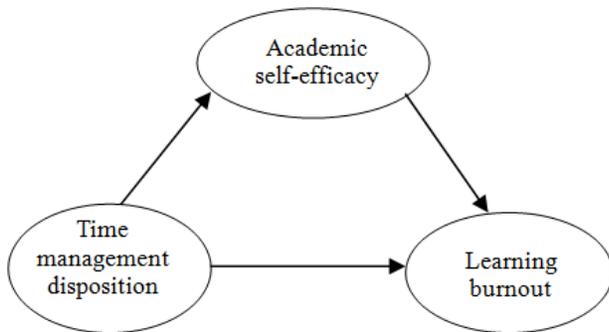


Fig. 1. Hypothetical path of each research variable

## II. OBJECTS AND TOOLS

### A. Objects

A stratified random sampling method was used to select 820 undergraduates in a medical university, and 772 valid questionnaires were collected. The effective rate of the questionnaire was 94.1%. There were 420 boys and 352 girls; 175 freshmen, 156 sophomores, 154 juniors, 148 seniors, 139 fifth-grade students, 435 majored in medicine, 141 majored in science, 70 majored in engineering, 45 majored in liberal arts, and 81 majored in interdisciplinary subjects in arts and sciences, aged ( $18.5 \pm 1.4$ ).

### B. Tools

#### 1) Adolescence Time Management Disposition Inventory (ATMDI) [18]

Prepared by Huang Xiting and Zhang Zhijie, ATMDI contains 44 items, which are divided into the following three subscales: time value subscale (including two dimensions, social orientation and personal orientation), time monitoring subscale (including 5 dimensions such as setting goals, planning, priorities, time allocation and feedback, etc.), time efficacy subscale (including two dimensions, time management efficacy and time management behavior efficacy). Using Likert 5-point scoring, the score for “completely non-conforming” to “fully conforming” is rated as 1 to 5 points respectively. The higher the score is, the higher the time management disposition is. In this study, the Cronbach's coefficient of the total scale is 0.909, and the Cronbach's coefficient of each subscale is 0.842-0.880; the test-retest reliability of the total scale at one-month interval is 0.864, and the test-retest reliability of each subscale at one-month interval is 0.816 to 0.838.

#### 2) Academic Self-Efficacy Scale (ASES) [19]

Prepared by Liang Yusong and Zhou Zongkui, ASES contains 22 entries, which are divided into two dimensions: learning ability self-efficacy and learning behavior self-efficacy. Using Likert 5-point scoring, the score for “completely non-conforming” to “fully conforming” is

rated as 1 to 5 points. The higher the score is, the higher the individual's academic self-efficacy is. In this study, the Cronbach's coefficient of the total scale is 0.852, and the Cronbach's coefficient of each two dimensions is 0.830 and 0.792, respectively; the test-retest reliability of the total scale at one-month interval is 0.886, and the test-retest reliability of the two dimensions at one-month interval is 0.842 and 0.804, respectively.

#### 3) Learning burnout of undergraduate scale (LBUS) [20]

Prepared by Lian Rong and Yang Lixian, LBUS contains 20 entries, which are divided into three dimensions: low mood, misbehavior and low achievement. Using Likert 5-point scoring, the score for “completely non-conforming” to “fully conforming” is rated as 1 to 5 points respectively. The higher the score is, the higher the degree of learning burnout is. In this study, the Cronbach's coefficient of the total scale is 0.852, and the Cronbach's coefficient of each subscale is 0.733 to 0.829. The test-retest reliability of the total scale at one-month interval is 0.824, and the test-retest reliability of each subscale at one-month interval is 0.773 to 0.817.

#### 4) Self-edited questionnaire on the general information

It includes 4 items including gender, age, grade and major.

### C. Data Processing

The data was analyzed using SPSS 20.0. The main statistical methods include descriptive statistics, correlation analysis, and structural equation models, etc.

## III. RESULTS

### A. The current situation of undergraduates' time management disposition, academic self-efficacy and learning burnout

It can be seen from Table 1 that the time management disposition of this group of undergraduates are at the middle level (total score  $114.1 \pm 19.5$ , out of 220). They have strong time value but the weakest time monitoring. The total average score of learning burnout was  $61.8 \pm 8.6$  (out of 100), and the total average score of the academic self-efficacy scale was 73.1 (out of 110), which was also at the middle level.

### B. Correlation between research variables

It can be seen from Table 1 that the pairwise correlation coefficients between research variables are statistically significant, except between low mood and time value, low mood and academic self-efficacy (in each case,  $P < 0.05$ ).

### C. Tests on the mediating effect of academic self-efficacy in the relationship between undergraduates' time management disposition and learning burnout

#### 1) Establishment of structural equation model

Based on the above analysis, a basic hypothesis model of time management disposition and learning burnout with academic self-efficacy as a mediating variable is

established, as shown in Figure 2. It can be seen from this model that in addition to the direct impact on learning

burnout, time management disposition also has an indirect effect on learning burnout through academic self-efficacy.

TABLE I. CORRELATION BETWEEN VARIABLES (R, N=772)

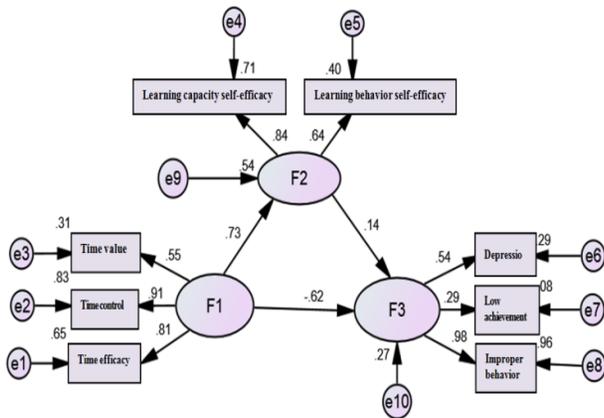
Items	M	SD	1	2	3	4	5	6	7	8	9	10	11
Time value	34.5	5.6											
Time monitoring	75.7	11.7	.514**										
Time efficacy	33.8	5.1	.454**	.732**									
Total score of ATMD	114.1	19.5	.715**	.946**	.840**								
Self-efficacy to learning ability	37.8	6.8	.365**	.551**	.523**	.577**							
Self-efficacy to learning behavior	35.4	5.7	.292**	.431**	.345**	.435**	.535**						
Academic self-efficacy	73.1	10.9	.378**	.566**	.504**	.585**	.899**	.851**					
Low mood	23.8	6	-0.052	-.130**	-.195**	-.146**	-.119**	.202**	0.031				
Misbehavior	18.6	3.7	-.164**	-.475**	-.402**	-.442**	-.277**	-.128**	-.238**	.530**			
Low achievement	16.6	3.6	-.252**	-.442**	-.420**	-.451**	-.585**	-.408**	-.575**	.107**	.277*		
Total score of learning burnout	61.8	8.6	.240**	.289**	.218**	.298**	.231**	.379**	.343**	.808**	.808*	.337**	

Note: \*P<0.05; \*\*P<0.01

2) Evaluation of the model

The fit index analysis on the path model of influence of academic self-efficacy and time management disposition on learning burnout found that CMIN = 1375.717 (p = 1.163 > 0.05), GFI=0.931>0.90, CFI=0.947>0.90, TLI=0.926>0.90, IFI=0.914>0.90, RMSEA=0.0761<0.08, indicating that the overall fit of the model is ideal, the model is accepted, and the null hypothesis is established.

used to test the mediating effect, and 200 samples were randomly selected from the original data to calculate the 95% confidence interval. The results showed that the 95% confidence interval of the indirect effect of academic self-efficacy on the total score of the adolescent time management disposition scale and the total score of the undergraduates' learning burnout scale was [-0.02, -0.05], excluding 0, indicating that the mediating effect is statistically significant. Among them, the indirect effect value of academic self-efficacy on the total score of the adolescent time management scale and the total score of the undergraduates' learning burnout scale was .1022, accounting for 16.5% of the total effect.



F1: Time management disposition  
 F2: Academic self-efficacy  
 F3: Learning burnout

Fig. 2. A model of the mediating effect of academic self-efficacy in the relationship between time management disposition and learning burnout

In the case of the influence of gender and whether only child or not being controlled, the bias-corrected non-parametric percentile Bootstrap method was further

IV. DISCUSSION

The study results showed that undergraduates' time management disposition and academic self-efficacy are at the middle level, consistent with the previous researches [4, 21-23], suggesting that undergraduates' time management disposition and academic self-efficacy still have more room for improvement. The total score of the learning burnout scale is (114.1±19.5), according to the standard set by Lian Rong [20], the undergraduates' learning burnout is moderate, consistent with previous research results [5-8], suggesting the undergraduates in medical colleges are equivalent to undergraduates from other schools in other majors. Among the three dimensions of the undergraduates' learning burnout scale, the misbehavior score was the highest. It shows that the medical students' learning burnout is mainly characterized by bad learning behaviors (such as skipping classes, lack of concentration, learning procrastination, etc.).

This study found that there are direct and indirect effects between undergraduates' time management disposition and learning burnout.

On the one hand, there is a significant negative correlation between time management disposition and learning burnout, which is the direct effect between the two, consistent with the results of previous studies [16-17]. In other words, undergraduates with higher time management disposition are more inclined to plan time scientifically and make use of time rationally, they can handle the heavy learning tasks in an orderly manner, and can also properly carry out leisure and entertainment activities, striking a proper balance between work and rest, therefore it is not easy to generate learning pressure or learning burnout.

On the other hand, there is an indirect effect between time management disposition and learning burnout: time management disposition--academic self-efficacy--learning burnout, that is, academic self-efficacy partially plays mediating effect in the relationship between time management disposition and learning burnout. Higher time management disposition will lead to higher academic self-efficacy in undergraduates, making them more proactive in learning, more likely to effectively solve learning difficulties, therefore achieving better learning outcomes, demonstrating their learning potential, more self-confident in learning, then learning burnout is also reduced.

#### V. CONCLUSION

This study preliminarily reveals the relationship between undergraduates' time management disposition and learning burnout, and validates the theoretical hypothesis: there is a direct positive correlation between undergraduates' time management disposition and learning burnout, and the time management disposition can indirectly affect learning burnout through academic self-efficacy. According to the results of this study, we put forward the following reference opinions in respect of family and school education: to solve the behavioral problems such as learning burnout, we should start with enhancing the mental health education and psychological quality training for undergraduates that, on the one hand, help them improve their ability to manage time and develop reasonable study and life plan to improve their self-confidence, which plays an important role in preventing the occurrence of learning burnout; on the other hand, reform existing teaching methods, create a good learning environment, and improve the level of self-efficacy of undergraduates, so that they can better solve learning difficulties, calmly deal with emotional problems, and effectively prevent learning burnout. In the future, we can add longitudinal research data to further verify the relationship between undergraduates' time management disposition and learning burnout.

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