

Mindfulness, Academic Competency and Academic Self-efficacy: A Cross-sectional Study

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This cross-sectional study aimed to investigate the relationship between mindfulness and academic competency among International students in China, as well as the potential mediating role of academic self-efficacy in this association. International students in China (n=476) were recruited to complete the Mindful Attention Awareness Scale (MAAS), the Academic Self-efficacy Scale (ASES), and the competence subscale of the Positive Youth Development Inventory (PYDI). The results found that mindfulness correlated positively with academic self-efficacy and academic competency. Furthermore, the results revealed that the mediation model fit the data well; academic self-efficacy partly mediated the association of mindfulness with academic competency. We concluded that this insight contributes to a better understanding of the interplay between mindfulness, academic competency, and the psychological aspects of academic self-efficacy, providing valuable implications for interventions and strategies to promote academic performance among the target population.

Keywords: academic competence; international students; self-efficacy; mindfulness.

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Внимательность, академическая компетентность и академическая самооффективность: перекрестное исследование

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Целью данного исследования было изучение связи между осознанностью и академической компетентностью среди иностранных студентов в Китае. Помимо этого, исследование также рассматривало возможную посредническую роль академической самооффективности в этом контексте. Иностранным студентам в Китае ($n=476$) предложили заполнить шкалу осознанного внимания (MAAS), шкалу академической самооффективности (ASES) и подшкалу компетентности «Инвентарь позитивного развития молодежи» (PYDI). Результаты показали, что осознанность положительно коррелирует с академической самооффективностью и академической компетентностью. В дополнение к этому результаты показали, что модель хорошо отражает данные — академическая самооффективность играет частичную посредническую роль в связи между осознанностью и академической компетентностью. Результаты исследования способствуют лучшему пониманию взаимосвязи между осознанностью, академической компетентностью и психологическими аспектами академической самооффективности. В дополнении даны ценные рекомендации для разработки стратегических мероприятий, направленных на продвижение академической успеваемости среди целевой аудитории.

Ключевые слова: академическая компетентность; иностранные студенты; самооффективность; осознанность.

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Introduction

Students' academic success is one of educational institutions' primary goals. Therefore, educational and psychological studies on the

subject of students' academic performance have become the focus of scientific research for a long time. With the emergence of psychological variables and new techniques, the research

in this area has continued in pursuit of achieving high performance for students in schools and universities. Among these essential topics in psychology, mindfulness arose as one of the most critical applications of positive psychology [4; 23]. It significantly improves students' efficiency and alleviates their academic and psychological problems during learning [3]. Mindfulness is the practice of paying attention to where you are and where your thoughts are flowing on a minute-by-minute [35; 65]; it contributes directly to non-judgment, self-criticism, and increased self-understanding and thus helps the individual to move away from irrational thinking [64]. Mindfulness is based on increasing awareness, moment by moment, which may facilitate openness to experiences and experiences. Mindfulness enhances a sense of life and exploration of meaning [76].

Several studies have emphasized that mindfulness positively correlates to academic performance [43; 45; 47; 74]. Mindfulness techniques have been shown to improve academic performance, including success in school [15; 8], test performance [30; 62], recall of learning information [22; 40; 53], student ability [29], grade point average [54], and classroom climate [61].

Self-efficacy is another crucial variable that helps to improve students' academic performance, where self-efficacy plays a role in academic performance [20]. Therefore, this study investigates the mediating role of self-efficacy in the association of mindfulness and academic competence among International students in China.

Mindfulness and academic competence

Mindfulness has been defined as the ability to intentionally bring awareness to experience in the present moment with a tendency to openness and curiosity. Mindfulness is a flexible mental activity open to new ideas to create new and practical needs [41]. According to Brown and Ryan [14], mindfulness refers to attention and acceptance of reality, awareness of everything related to the events of the current experience, and not making judgments about them. Mindfulness meditation entails concentrating on a single procedure, such as breathing, acknowl-

edging distracting thoughts or emotions, and then letting them go [33]. Furthermore, mindfulness Develops Meta-Cognitive Awareness, which is learned to notice thoughts or feelings, with which we need to act to counteract negative feelings and encourage the individual to develop a perspective [36]. Mindfulness is affected by the individual's abilities, personal expectations, motivation, and ability to plan and achieve later. Students who practice mindfulness have been shown to achieve higher test scores than students who do not [5; 29; 57]. Mindfulness helps outstanding students reconcile with themselves, especially those who suffer from stress, reflected in the soundness of their thinking by following specific patterns of thinking, such as reflective or analytical thinking [34].

Academic performance can be defined as an individual's demonstrated level of knowledge in a specific subject or area or the degree to which they achieve specific goals established by their educational context [68; 69]. Academic performance is doing something to achieve the desired result, such as success in a skill or set of information. Academic performance refers to the amount of individual school learning that is measured using a variety of tests such as math and dictation. Academic performance refers to a student's success in academic subjects [45]. According to Bennett, Egan [10], mindfulness techniques could be used in academic settings (Miller, Fletcher, and Kabat-Zinn, 1995). Studies linked mindfulness to improvements in various desirable academic outcomes, such as understanding reading [51], increasing working memory capacity [21; 27; 52], enhancing students' knowledge [17], self-regulation of attention [49], quickly recalling [5; 12; 21], and improving attentional functions and flexibility [39; 50; 72].

Dispositional mindfulness positively predicts academic performance [1; 2], whereas self-destruction and self-criticism are negative predictors [37]. Classroom climate mediated the relationship between mindfulness and predicted academic performance [44]. Empirical studies such as [5; 62; 71; 79] found that mindfulness interventions improve students' academic performance. A study by Ramsburg and Youmans [57] examined the impact of meditation on

knowledge retention among university students. The results showed that the brief mindfulness meditation improved students' retention of the information presented during the lecture. Another study by [9] examined the impact of a 5-week mindfulness meditation intervention in academic outcomes among 34 students with learning disabilities and found that social skills and academic performance improved. In contrast, the state and trait of anxiety decreased. Accordingly, this study proposes the following hypothesis:

H1: Mindfulness is positively associated with academic competence in International students.

Academic self-efficacy as a mediator

According to Bandura [6], self-efficacy is the belief in one's ability to perform at a certain level and change events in one's life. Self-efficacy is the capacity to carry out the planned behaviour and then modify the course of events to effect change and advancement.

As a particular subset of self-assessment of problem-solving abilities on educational training, academic self-efficacy is a subset of general self-efficacy that includes beliefs and personal achievement judgments about academic goals [31], such as learning objectives, assignments, or exceeding academic levels [7]. Accordingly, self-efficacy is the growth of activities, content, knowledge, interest in learning, or educational competencies like research [58].

The educational psychology and education section is interested in and analyses academic self-efficacy [60]. Present research indicates that there is a relationship between academic performance and self-efficacy [20] or between learning self-regulation and academic performance [75], school performance [59], attitudes toward research, academic resilience, academic well-being, and psychological changes in the school context [19], among other relationships.

Research revealed that academic self-efficacy may play a role in the association of mindfulness with various variables such as depression, anxiety and stress [58], competitive state anxiety [63] and subjective well-being [56]. At the same time, no study has been conducted to investigate the potential mediating role of self-efficacy in the association between mindful-

ness and academic competence. As a result, research on academic competency provides a means of understanding educational dynamics and facilitating their intervention, especially in light of the challenges that educators, students, and the educational system can encounter. The findings indicated that self-efficacy, academic achievement, and mindfulness correlate positively [11; 32; 77].

Therefore, our study tries to investigate the potential mediating role of academic self-efficacy in the association between mindfulness and academic competence, and the supposes the following hypothesis:

H2: Academic self-efficacy mediates the association of mindfulness with academic competence in International students.

Method

Participants.

A total of 476 international students (Males 67%, and Females 33%) who study in China voluntarily participated in this study. They received informed consent, assuring the privacy of their responses. The age of the research sample ranged from 18 to 36 years ($M_{age} 28.85 \pm 2.42$). All of them were international students and had not had any mindfulness training before.

Measurements.

— **Mindfulness.** This study used the 15-item Mindful Attention Awareness Scale (MAAS) [13]. Every item was rated on a 6-point Likert scale, where one meant "rarely" and six meant "almost always." Items with negative wording were switched around so that high scores correspond to increased mindfulness levels. Cronbach's alpha for this investigation was 0.90.

— **Academic self-efficacy.** This study has made use of the Academic Self-efficacy Scale (ASES), which consists of ten questions (García, Inglés, Torregrosa, Ruiz, Díaz, Pérez & Martínez, 2016). A 5-point Likert scale, with one denoting "strongly disagree" and five denoting "strongly agree," was used to score each item. Cronbach's alpha for this study was 0.72.

— **Academic Competence.** The participants' academic competency was evaluated using the competence subscale of the Positive Youth

Development Inventory (PYDI) (Arnold, Nott, & Meinhold, 2012). Fourteen items on this scale had a 5-point Likert scale, with one denoting “strongly disagree” and five denoting “strongly agree.” The current study’s alpha reliability was 87.

Data Analysis.

The study variables were correlated using the Pearson correlation coefficient. The mediation analyses used the PROCESS macro (version 3.5) on SPSS [70]. Five thousand bootstrap re-samples were used in the models of this study to investigate the mediated effects and generate 95% confidence intervals.

Results

Correlations among the study variables.

The results (Table 1) revealed that mindfulness correlated positively with academic self-efficacy and competency.

Table 1

Correlation among study variables

Variables	1	2	3
1. Mindfulness	1		
2. Academic self-efficacy	.573**	1	
3. Academic Competence	.880**	.902**	1
Mean	32.01	22.33	56.69
Standard Deviation	7.571	5.827	13.495

Note. $p < 0.01$.

Direct and indirect effects of mindfulness on academic competence

To investigate mindfulness’s influence on academic competence we adopt the bias-corrected percentile bootstrap method (Macro PROCESS in SPSS, sample=5000, 95% CI) to test the mediating effect results. When mindfulness was used as the independent variable, academic competence as the dependent variable, and academic self-efficacy as the mediating variable, the results were as follows: The total effect of mindfulness on academic competence is significant ($\beta=0.18$, $p < 0.05$), the direct effect of mindfulness on academic competence is significant ($\beta=0.10$, $p < 0.05$). Mindfulness positively predicted academic self-efficacy. Academic self-efficacy positively predicted academic competence. Finally, the bias-corrected percentile bootstrap method indicated that the indirect effect of mindfulness on academic competence through academic self-efficacy was significant, $ab=0.08$, $SE=0.02$, $95\% \text{ CI}=[0.07, 0.20]$. This indicates that self-efficacy partly mediated the effect of mindfulness on academic competence. See table 2 for more details.

Discussion

The first aim of our study is to investigate the relationship between mindfulness and academic competency. The results revealed that mindfulness correlated positively with academic self-

Table 2

Testing the mediation effect of mindfulness on academic competence

Model	b	SE	t	95% CI	p
Mindfulness→Academic self-efficacy (a)	.10	.02	4.26	[.06, .13]	0.00
Academic self-efficacy→Academic competence (b)	.85	.04	40.12	[.77, .92]	0.00
Mindfulness→Academic competence (c)	.10	.02	4.73	[.06, .13]	0.00
Mindfulness→Academic self-efficacy→Academic competence	.08	.02	5.34	[.04, .11]	0.00
Total effect (Mindfulness→Academic competence (c))	.18	.03	8.60	[.12, .23]	0.00

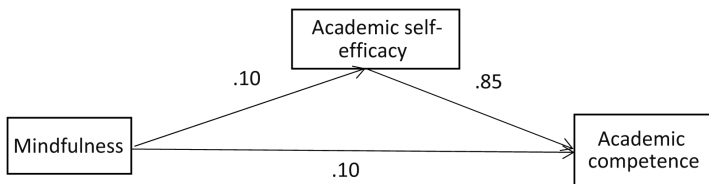


Fig. 1. The Mediation Effect of Mindfulness on Academic Competence

ficacy and academic competency. This result is partially consistent with previous studies such as [38; 42; 63]. The positive relationship between mindfulness and academic self-efficacy and academic competency among international students studying in China may be because mindfulness practices, such as meditation and deep breathing, reduce stress and promote a sense of calm. For international students facing the challenges of adapting to a new culture, language, and educational system, practising mindfulness could help alleviate stress and contribute to a more positive mindset, enhancing academic self-efficacy and competency. Mindfulness involves being fully present and attentive to the current moment. Mindfulness practices may improve concentration and focus, leading to better academic performance [28; 43; 46; 48; 78]. This heightened attention to tasks could increase academic self-efficacy, as individuals feel more capable of managing their academic responsibilities. Mindfulness practices often involve cultivating awareness of emotions without judgment. International students may face various emotions, including homesickness, cultural adjustment, and academic pressure. Mindfulness can help individuals regulate their emotions, fostering emotional well-being. This emotional regulation may positively impact perceptions of self-efficacy and overall academic competency.

The second aim of this study was to investigate the potential mediating role of academic self-efficacy in the association of mindfulness with academic competency. Our results revealed that academic self-efficacy partly mediated the association of mindfulness with academic competency. That's because academic self-efficacy refers to an individual's belief in their ability to succeed academically. Mindfulness practices enhance individuals' awareness and acceptance of their capabilities, increasing self-efficacy [24; 25; 55]. This boost in self-efficacy can positively influence academic competency by fostering a more confident and proactive approach to learning and problem-solving [73]. Mindfulness practices often reduce stress and improve emotional well-being [16; 18]. Reduced stress levels can contribute to a more positive mindset and increased belief in one's abil-

ity to handle academic challenges. Individuals may approach tasks more confidently as academic self-efficacy grows, leading to improved academic competency. Mindfulness practices, which involve being fully present in the moment, can enhance concentration and focus [26; 67]. Individuals who engage in mindfulness may experience improved attention during academic tasks [53]. This increased focus can contribute to a sense of mastery over academic activities, influencing academic self-efficacy and, consequently, academic competency.

Mindfulness practices often encourage individuals to accept and cope with challenges rather than avoid or resist them [66]. By developing adaptive coping strategies, individuals may feel more capable of addressing academic difficulties, leading to higher academic self-efficacy. This increased self-efficacy can positively impact academic competency. Mindfulness practices have been associated with cognitive benefits, including improved problem-solving skills and memory [4]. These cognitive enhancements may contribute to individuals feeling more capable in their academic pursuits, influencing academic self-efficacy and, subsequently, academic competency. It's important to note that the term "partly mediated" indicates that while academic self-efficacy plays a significant role in explaining the relationship between mindfulness and academic competency, other factors may also be at play. The specific mechanisms of this mediation should be further explored through research, considering contextual factors and individual differences to gain a more comprehensive understanding of the relationship between mindfulness, academic self-efficacy, and academic competency.

Limitations and future directions

While the study provides valuable insights into the relationship between mindfulness, academic self-efficacy, and academic competency among international students in China, it's essential to acknowledge its limitations and suggest potential directions for future research. The first limitation is that the study was designed as a cross-sectional study, which limits the ability to establish causation. Longitudinal or experimental designs would provide a more robust

understanding of the temporal relationships between mindfulness, academic self-efficacy, and academic competency. Second, this study relies on self-report measures, which may be subject to biases such as social desirability or response tendencies. Future research could benefit from incorporating objective measures or multiple sources of data to enhance the reliability and validity of the findings data sources to enhance findings reliability and validity in China, and the findings may need to be more generalisable to other cultural contexts or student populations. Future research should consider diverse samples to explore the generalizability of the observed relationships.

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Future research should conduct longitudinal studies to examine the dynamic nature of the relationships over time. This would help establish temporal precedence and clarify the directionality of the associations. In addition, future research should explore cultural variations in the relationship between mindfulness, academic self-efficacy, and competency. Comparing findings across different cultural contexts can enhance the study's external validity. Incorporate objective measures of academic performance to complement self-reported competency assessments. This would strengthen the validity of the findings by providing a more objective indicator of academic success.

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