

Mastery Approach Goals Mediate the Relationship Between Authenticity and Academic Cheating: Evidence from Cross-Sectional and Two-Wave Longitudinal Studies

Xiaobo Xu ¹, Mengya Xia², Qinghua Chen ³, Weiguo Pang⁴

¹School of Psychology, Shanghai Normal University, Shanghai, People's Republic of China; ²T. Denny Sanford School of Social and Family Dynamics, Arizona State University, Tempe, AZ, USA; ³Department of Psychology, Hefei Normal University, Hefei, People's Republic of China; ⁴School of Psychology and Cognitive Science, East China Normal University, Shanghai, People's Republic of China

Correspondence: Xiaobo Xu, School of Psychology, Shanghai Normal University, 100# Guilin Road, Shanghai, 200234, People's Republic of China, Email xbxu@shnu.edu.cn; Weiguo Pang, School of Psychology and Cognitive Science, East China Normal University, 3663# North Zhongshan Road, Shanghai, 200062, People's Republic of China, Email wgpang@psy.ecnu.edu.cn

Purpose: Prior studies revealed several beneficial aspects of being authentic, such as higher subjective well-being, more harmonious interpersonal relationships, and better workplace performance. However, how authenticity relates to unethical cheating behaviors in the academic context remains to be seen. Based on the literature review, the present study hypothesized that authenticity may be negatively linked to academic cheating through the mediating path of mastery approach goals.

Methods: In Study 1, 250 college students self-reported their demographics and academic performance, and completed the scales of authenticity, academic cheating, mastery approach goals, and social desirability. In Study 2, 111 college students completed the same measures as in Study 1 at two different time points (5 months in between).

Results: In Study 1, the results indicated that authenticity was positively associated with mastery approach goals, and both were negatively associated with academic cheating. After controlling for the confounding effect of gender, age, academic performance, and social desirability, mastery approach goals were identified as a mediator in the authenticity–academic cheating relationship. In Study 2, the correlation result confirmed the association patterns found in Study 1. Moreover, cross-lagged analysis supported the directionality proposed in the mediation model.

Conclusion: The findings identified the mediating role of mastery approach goals in the link between authenticity and academic cheating, supporting the motivated cognition perspective of personality, the motivational model of academic cheating, and the self-determination theory. Implications, limitations, and directions for future research were provided.

Keywords: authenticity, mastery approach goals, academic cheating, mediation

Introduction

Academic cheating describes rule-violating behavior directed at obtaining competitive advantages, such as using cheat sheets or copying other students' answers during a test.^{1,2} As a deviant yet prevalent phenomenon that widely exists across different educational levels and cultures,^{2,3} academic cheating directly undermines education fairness, impairs the ethical development of students, and damages the reputation of institutions.⁴ For the sake of understanding and possibly designing appropriate intervention programs to decrease its occurrence and negative influence, research on the antecedents, correlates, and predictors of academic cheating is of theoretical and practical significance.⁵

There are a variety of individual (eg, gender, morality, learning motivation, and personality) and situational (eg, academic integrity culture, the perceived reward for success, and academic pressure) correlates of academic cheating.^{6–9} Among them, personality variables (eg, the Big Five and the Dark triad) have received increased attention from

psychological and educational researchers over the last three decades (Giluk & Postlethwaite, 2015; Lee et al, 2020; Whitley, 1998).^{7,9,10} Specifically, prior studies reported that individuals with lower self-esteem,¹¹ conscientiousness,¹⁰ agreeableness,⁷ honesty-humility,^{12,13} higher impulsiveness,¹⁴ and Dark triad personality (ie, narcissism, Machiavellianism, and psychopathy)^{5,12} are more likely to exhibit cheating behavior in a learning context. Moving a step further, this study aimed to expand on existing literature by focusing on authenticity, a rarely studied personality trait in the learning context, to examine its association with academic cheating and its underlying mediating mechanism.

Authenticity refers to being aware of and following one's true self.^{15–17} Related to the focus on living an intrinsically motivated and self-concordant life, authenticity is associated with several adaptive outcomes, such as higher levels of subjective and psychological well-being, autonomy, workplace engagement and performance, and interpersonal harmony,^{18–21} as well as lower levels of depression, anxiety, feelings of immorality and impurity, unethical behavior, job burnout, and turnover intention.^{22–25}

Although authenticity has rarely been empirically examined, it is likely related to less academic cheating. First, according to the definition of authenticity, authentic people usually prefer to behave in accordance with their true self,^{15,17} which inherently decreases their tendency of exhibiting “faking good” cheating behavior that directly hinders their pursuit of an authentic self. Second, according to the essential moral self-hypothesis, authentic people generally tend to view their true selves as morally virtuous and are motivated to behave in ways aligned with ethical standards,^{25–27} indicating a lower likelihood of engaging in unethical and immoral cheating behaviors in a learning context.

Beyond the examination of the direct relationship between authenticity and academic cheating, this study also aims to explore possible indirect paths whereby the former links to the latter. According to the motivated cognition perspective of personality, personality can determine the motivational preference people use to cope in the world.²⁸ Furthermore, Murdock and Anderman proposed an integrated model of academic dishonesty, which highlights the crucial role of motivational mechanisms in linking individual and contextual factors to students' propensity to cheat.¹ Illuminated by the above perspectives, this study proposes that the mastery approach goals, defined as the need to acquire new knowledge and skills and improve intrapersonal competence,²⁹ may serve as the preferred motivation (ie, function as a mediator) through which authenticity relates to lower levels of academic cheating.

Prior studies have provided preliminary support for the above-mentioned mediation model. On one hand, self-determination theory (SDT) proposed that authentic people generally hold a self-determined and incremental mindset that one can change important self-aspects through his/her efforts, which encourages them to seek activities that promote personal growth and self-improvement and fuel the development of mastery-oriented goals.¹⁶ Empirical evidence also supported the above viewpoint and found that authentic individuals in a nurse sample have higher levels of mastery goal orientation.³⁰ On the other hand, mastery approach goals are an intrinsic motivation associated with understanding and mastering new knowledge and skills.³¹ Therefore, it is not surprising that students who hold higher levels of mastery approach goals are generally less likely to engage in academic cheating, because such cheating behaviors are essentially performance-oriented (ie, to obtain external rewards or recognition) and counterproductive to true learning, as revealed in several empirical studies.^{1,2,32,33}

In summary, the current study aimed to test whether mastery approach goals mediate the link between authenticity and academic cheating. Based on the above literature, this study proposes that authenticity is negatively correlated with academic cheating (Hypothesis 1). In addition, it was expected that mastery approach goals would mediate the relationship between authenticity and academic cheating (Hypothesis 2). To ensure the robustness of the findings, a cross-sectional (Study 1) and a two-wave longitudinal (Study 2) design were employed to examine the above hypotheses and elucidate the direction of causality among research variables.

Study 1

This study employed a cross-sectional design to examine the interplay among authenticity, mastery approach goals, and academic cheating. Academic performance and social desirability were included as control variables, due to academic performance usually being documented as an important predictor of students' tendency to engage in cheating behavior,¹⁴ and participants may provide socially desirable responses to academic cheating items.³⁴

Participants and Procedure

Data were collected via an online survey website (<http://www.sojump.com>). To recruit potential respondents, several college teachers were asked to supply their students with the survey's Internet link. A total of 276 college students without dyslexia or major mental illness voluntarily completed the survey items. After removing 26 participants who failed the attention check, the final sample consisted of 250 college students (77.20% female), aged between 17 and 28 years ($M = 20.64$ years, $SD = 1.33$, one participant provided invalid information). To examine whether the sample size was appropriate for the analytic plan, we performed a Monte Carlo power analysis for mediation models using the final sample ($n = 250$) with setting a medium effect size of correlation of 0.30 between factors.^{35,36} The results showed that the current sample size had sufficient power (above 0.95) to detect the parameters of interest with α at 0.05 level. Therefore, the sample size of this study was appropriate.

All participants were explicitly informed of the voluntariness and confidentiality of this study once they logged onto the survey website. Additionally, only those who signed the online informed consent form could participate in the formal survey, in which they were asked to provide demographic and academic performance, and complete the authenticity, academic cheating, mastery approach goals, and social desirability scales. The survey took approximately three minutes to complete. Each participant who finished all the survey items received RMB 1 (approximately USD 0.15) as compensation. The study was approved by the research ethics committee of [blinded].

Measures

Authenticity

This was assessed using the 12-item authenticity scale (three dimensions, four items for each): self-alienation (eg, "I feel as if I don't know myself very well"), authentic living (eg, "I live in accordance with my values and beliefs"), and accepting external influence (eg, "I am strongly influenced by the opinions of others").^{17,21} Participants responded on a seven-point Likert scale (1 = does not describe me at all, to 7 = describes me very well). For ease of interpretation, an average authenticity score was calculated, with items anchored on "self-alienation" and "accepting external influence" reverse coded. Therefore, higher scores indicated higher levels of authenticity. The scale had satisfactory reliability (Cronbach's $\alpha = 0.83$).

Mastery Approach Goals

This was assessed using three items from the achievement goal questionnaire.²⁹ An example item is, "It is important for me to understand the content of this course as thoroughly as possible". This scale has good psychometric properties and is widely used in the Chinese context.^{37,38} Participants rated items on a seven-point Likert scale (1 = not true of me at all; 7 = very true of me). The mean of all items was calculated, with higher scores indicating a higher level of mastery approach goals. The scale had satisfactory reliability (Cronbach's $\alpha = 0.83$).

Academic Cheating

This was assessed using the 5-item active cheating scale.³⁹ Items include "I ask help from other students during written exams", "I copy other students' answers during written exams", "I copy someone else's homework", "During an exam, I receive or send answers using a mobile phone", and "I use cheat sheets in exams". Participants rated items on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). The mean of all items was calculated, with higher scores indicating a higher level of academic cheating. The scale had acceptable reliability (Cronbach's $\alpha = 0.77$).

Academic Performance

Considering that self-report GPA or test scores may be heterogeneous and not comparable between participants from different disciplines, academic performance was assessed by asking participants to report their academic ranking on a four-point scale (1 = bottom 25%, 2 = 50%–75%, 3 = 25–50%, 4 = top 25%). Prior studies have validated the appropriateness of using this ranking score to indicate academic performance.⁴⁰

Social Desirability

This was measured using five items from the Marlowe-Crowne social desirability scale.⁴¹ An example item is “I am always courteous, even to people who are disagreeable”. The participants responded in a true-false format. The mean of all items was calculated, with higher scores indicating a higher level of social desirability. The scale had acceptable reliability (Cronbach’s $\alpha = 0.66$).

Statistical Analyses

In this study, SPSS 19.0 (IBM, Armonk, NY) was used to perform descriptive (ie, mean, standard deviation, skewness, kurtosis, and range) and correlational analyses of all the research variables of interest. In addition, Hayes PROCESS macro 3.3 (model 4) was used to examine the proposed mediation effect.⁴²

Results

Descriptive and Correlation Analyses

Table 1 presents the key variables’ descriptive statistics (ie, mean, standard deviation, range, skewness, and kurtosis) and correlation analyses. As shown in this table, the distribution of these variables is generally normal since all the absolute values of the skewness (ranges from 0.15 to 1.30) and kurtosis (ranges from 0.04 to 3.55) scores are smaller than 3 and 8, respectively.⁴³ In addition, authenticity was positively associated with mastery approach goals, while both of them were negatively associated with academic cheating. A significant gender difference in authenticity and academic cheating was observed, with male participants scoring higher than their female counterparts. Age was negatively associated with mastery approach goals, indicating that older students were less motivated than their younger counterparts. Interestingly, both academic performance and social desirability were positively associated with authenticity and mastery approach goals and showed a negative association with academic cheating. Therefore, gender, age, academic performance, and social desirability were included as control variables in the subsequent mediation analysis to control for possible confounding effects.

Test of Mediation

This study examined whether authenticity relates to less academic cheating through the mediating role of mastery approach goals. As shown in Table 2, the 95% bias-corrected bootstrapped confidence intervals (CIs) of the indirect effects did not include zero. Combined with the regression coefficients, the results indicated that mastery approach goals partially mediated the link between authenticity and academic cheating (see Figure 1).

Table 1 Descriptive Characteristics and Correlation Matrix of All Variables (N = 250)

	1	2	3	4	5	6	7
1. Gender	–						
2. Age	0.03	–					
3. Academic performance	–0.00	0.11	–				
4. Social desirability	–0.14*	–0.14*	0.06	–			
5. Authenticity	–0.20**	–0.09	0.17**	0.21**	–		
6. Master approach goals	–0.04	–0.19**	0.20**	0.15*	0.20**	–	
7. Academic cheating	–0.14*	0.09	–0.21**	–0.10	–0.19**	–0.31***	–
M	1.77	20.64	3.02	0.69	4.71	5.27	1.62
SD	0.42	1.33	0.94	0.30	0.77	1.09	0.55
Range	1–2	17–28	1–4	0–1	1–7	1–7	1–5
Skewness	–1.30	0.88	–0.50	–0.74	–0.15	–0.44	1.05
Kurtosis	–0.30	3.55	–0.83	–0.43	0.04	–0.13	0.84

Notes: *p < 0.05, **p < 0.01, ***p < 0.001. Gender: 1 = male, 2 = female.

Table 2 Effect Size and Confidence Intervals of the Mediation Analysis, Controlling for Gender, Age, Academic Performance, and Social Desirability

Indirect Pathways	Effect Size	SE	95% CI	
			Lower	Upper
Authenticity–mastery approach goals–academic cheating	−0.03	0.02	−0.072	−0.002

Interim Discussion

Consistent with this study's hypotheses, the results uncovered a positive relationship between authenticity and mastery approach goals, and a negative relationship between authenticity/mastery approach goals and academic cheating. In addition, mastery approach goals were identified as a partial mediator that links authenticity to less academic cheating.

Study 2

Although Study 1 lends preliminary support for the proposed mediation model, it is difficult to imply any directionality, given its cross-sectional nature.^{44,45} To address this limitation, Study 2 employed a two-wave longitudinal design to examine the directionality of associations. As in Study 1, academic performance and social desirability were included as control variables.

Participants and Procedure

Data was collected through convenience sampling from a public university located in Eastern China. To recruit potential respondents, several college teachers were asked to supply their students with the online survey link. As in Study 1, the voluntariness and confidentiality of this study were clearly explained to each participant, and only those who signed the online informed consent form could participate in the survey, in which they were instructed to report their demographic information and complete the authenticity, academic cheating, and mastery approach goals scales at two different time points (with a five-month time interval). Participants' academic performance and social desirability tendency were only self-reported during the first time point. The survey at both time points took about three minutes to complete and participants received RMB 1 (approximately USD 0.15) as compensation. The study was approved by the research ethics committee of [blinded].

The first and second waves of data collection took place in October 2021 (time 1 [T1]) and March 2022 (time 2 [T2]). At T1, a total of 157 undergraduates without dyslexia or major mental illness were recruited (73.25% female), with an average age of 19.47 years ($SD = 1.37$, range: 17–23 years). At T2, 115 participants from T1 completed the survey. After removing three participants who failed attention checks and one participant who reported inconsistent demographic information at T1 and T2, the final sample consisted of 111 participants (76.58% female) aged between 17 and 23 years ($M = 19.35$ years, $SD = 1.30$, one participant provided invalid information). To examine whether the sample size was appropriate for the analytic plan, we performed a Monte Carlo power analysis using the final sample ($n = 111$) by setting

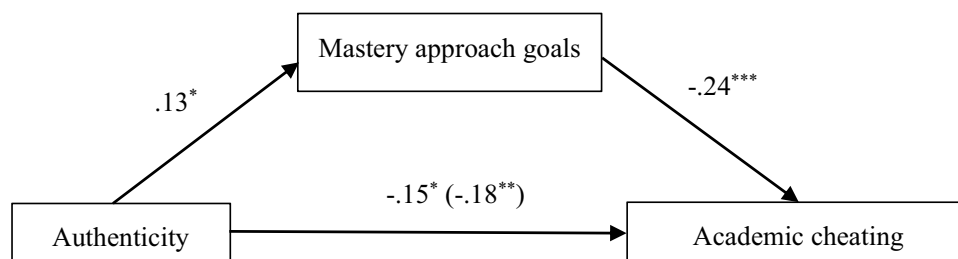


Figure 1 Mastery approach goals partially mediate the link between authenticity and academic cheating. Gender, age, academic performance, and social desirability were included as control variables. The value in parentheses is the direct effect of authenticity on academic cheating without including the mediator. All path coefficients were standardized.

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

a medium effect size of correlation and cross-lagged regression at 0.3, and a large effect size of auto-regression at 0.50.^{36,46} The results showed that the current sample size had sufficient power (above 0.80) to detect all the parameters of interest (in our case, correlations, cross-lagged regressions, and auto-regressions) with α at 0.05 level. Therefore, the sample size of this study was appropriate.

Measures

Authenticity

As in Study 1, this was assessed using the 12-item authenticity scale.^{17,21} The reliability of this scale was satisfactory (Cronbach's $\alpha = 0.82$ at T1; $\alpha = 0.86$ at T2). An average authenticity score was calculated, with higher scores indicating higher levels of authenticity.

Mastery Approach Goals

As in Study 1, this was assessed using three items from the achievement goal questionnaire.²⁹ The reliability of this scale was satisfactory (Cronbach's $\alpha = 0.85$ at T1 and $\alpha = 0.90$ at T2). The mean of all items was calculated to represent the overall level of mastery approach goals.

Academic Cheating

As in Study 1, this was assessed using the 5-item active cheating scale.³⁷ The reliability of this scale was acceptable (Cronbach's $\alpha = 0.77$ at T1; $\alpha = 0.81$ at T2). The mean of all items was calculated to indicate the general level of academic cheating.

Academic Performance

As in Study 1, this was assessed by asking participants to report their academic ranking on a four-point scale (1 = bottom 25%, 2 = 50%–75%, 3 = 25–50%, 4 = top 25%).

Social Desirability

As in Study 1, this was assessed by five items retrieved from the Marlowe-Crowne social desirability scale,⁴¹ with a marginally acceptable reliability (Cronbach's $\alpha = 0.47$).

Statistical Analyses

In this study, all statistical analyses were conducted on the basis of manifest variables. SPSS 19.0 (IBM, Armonk, NY) was used to perform descriptive (ie, mean and standard deviation) and correlational analyses. To examine the causal directions of the main research variables, Mplus 7.0 was employed to perform an integrated cross-lagged analysis that included within-time, autoregressive, and cross-lagged paths. The maximum likelihood estimation robust (MLR) was used to address possible non-normal data.⁴³ Finally, Hayes PROCESS macro 3.3 (model 4) was used to examine the proposed mediation effect.⁴²

Results

Descriptive and Correlation Analyses

Table 3 presents the key variables' descriptive statistics (ie, mean, standard deviation, range, skewness, and kurtosis) and correlation analyses. Generally, the distribution of these variables is normal since all the absolute values of the skewness (ranges from 0.15 to 1.51) and kurtosis (ranges from 0.09 to 2.63) scores are smaller than 3 and 8, respectively.⁴³ Notably, the skewness (1.51) and kurtosis (2.63) of academic cheating at Time 2 are relatively close to the cutoff points. In addition, authenticity was positively associated with mastery approach goals, while both of them were negatively associated with academic cheating at T1 and T2. In addition, a significant gender difference was observed in academic cheating at T1 and T2, with male participants scoring higher than their female counterparts. A significant age difference was observed in academic cheating at T1 and T2 and mastery approach goals at T1, with younger participants reporting lower academic cheating and higher mastery approach goals than older participants. Interestingly, academic performance at T1 was negatively associated with academic cheating at T1 and mastery approach goals at T2. Furthermore, social

Table 3 Descriptive Characteristics and Correlation Matrix of All Variables (N = 111)

	1	2	3	4	5	6	7	8	9	10
1. Gender	–									
2. Age	–0.41***	–								
3. T1 Academic performance	0.29**	–0.19	–							
4. T1 Social desirability	–0.14	–0.04	–0.16	–						
5. T1 Authenticity	–0.07	–0.02	0.10	0.21*	–					
6. T1 Master approach goals	0.08	–0.22*	0.18	0.10	0.32**	–				
7. T1 Academic cheating	–0.22*	0.32**	–0.32**	–0.14	–0.22*	–0.23*	–			
8. T2 Authenticity	–0.08	–0.04	0.14	0.19*	0.74***	0.30**	–0.24*	–		
9. T2 Master approach goals	0.04	–0.10	0.29**	0.13	0.40***	0.69***	–0.17	0.44***	–	
10. T2 Academic cheating	–0.24*	0.33**	–0.12	–0.17	–0.31**	–0.34***	0.77***	–0.31**	–0.34***	–
M	1.77	19.35	2.91	0.76	4.83	5.86	1.51	4.79	5.57	1.52
SD	0.43	1.30	0.92	0.24	0.72	0.89	0.50	0.77	1.01	0.54
Range	1–2	17–23	1–4	0–1	1–7	1–7	1–4	1–7	1–7	1–4
Skewness	–1.27	0.55	–0.68	–0.85	0.53	–0.46	0.99	0.58	–0.15	1.51
Kurtosis	–0.39	–0.09	–0.23	0.15	–0.30	–0.73	0.56	0.37	–0.94	2.63

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Gender: 1 = male, 2 = female. T1 = Time 1, T2 = Time 2.

desirability at T1 was related to higher levels of authenticity at T1 and T2. Therefore, gender, age, academic performance, and social desirability were included as control variables in the subsequent cross-lagged and mediation analysis, to control for possible confounding effects.

Cross-Lagged Path Analysis

As shown in Figure 2, the analytic model estimated the within-time, autoregressive, and cross-lagged paths. Regarding within-time associations, authenticity was positively associated with mastery approach goals at both T1 and T2, mastery approach goals were negatively associated with academic cheating at both T1 and T2. Authenticity was only negatively associated with academic cheating at T1. Regarding autoregressive associations, authenticity ($\beta = 0.69$, $SE = 0.06$, $p < 0.001$), mastery approach goals ($\beta = 0.61$, $SE = 0.06$, $p < 0.001$), and academic cheating ($\beta = 0.73$, $SE = 0.06$, $p < 0.001$) were relatively stable from T1 to T2. Regarding cross-lagged paths, authenticity at T1 significantly predicted mastery approach goals ($\beta = 0.19$, $SE = 0.08$, $p < 0.05$) and academic cheating ($\beta = -0.12$, $SE = 0.06$, $p < 0.05$) at T2. However, mastery approach goals ($\beta = 0.06$, $SE = 0.06$, $p = 0.32$) and academic cheating ($\beta = -0.06$, $SE = 0.08$, $p = 0.43$) at T1 did not significantly predict authenticity at T2. In addition, mastery approach goals at T1 negatively predicted academic

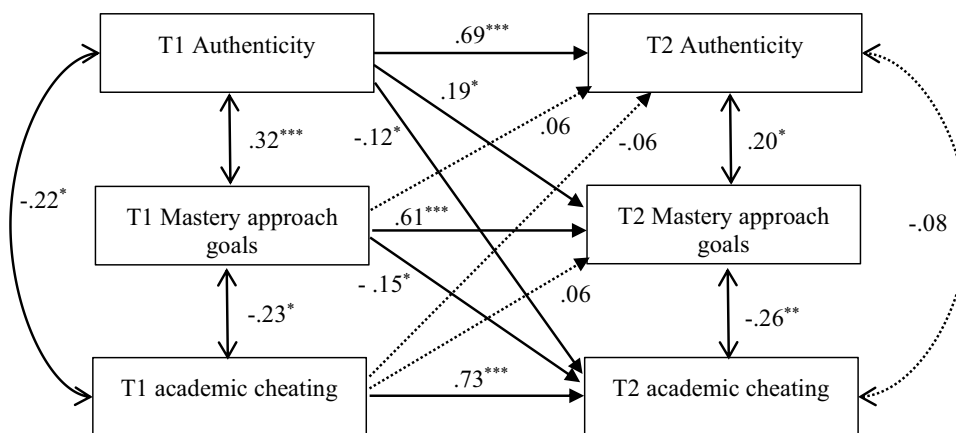


Figure 2 Integrated cross-lagged model on the relation among authenticity, mastery approach goals, and academic cheating. Gender, age, T1 academic performance, and T1 social desirability were included as control variables. All path coefficients were standardized. The dashed pathway is not significant. **Notes:** * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. T1 = Time 1, T2 = Time 2.

Table 4 Effect Size and Confidence Intervals of the Mediation Analysis, Controlling for Gender, Age, T1 Academic Performance, T1 Social Desirability, and T1 Academic Cheating

Indirect Pathways	Effect size	SE	95% CI	
			Lower	Upper
T1 Authenticity – T1 mastery approach goal – T2 academic cheating	-0.04	0.03	-0.098	-0.003
T1 Authenticity – T2 mastery approach goal – T2 academic cheating	-0.08	0.03	-0.153	-0.029

cheating at T2 ($\beta = -0.15$, $SE = 0.06$, $p < 0.05$), but academic cheating at T1 did not significantly predict mastery approach goals at T2 ($\beta = 0.06$, $SE = 0.07$, $p = 0.39$).

Test of Mediation

This study examined whether mastery approach goals at T1 and T2 mediated the relationship between T1 authenticity and T2 academic cheating when controlling for gender, age, T1 academic performance, T1 social desirability, and T1 academic cheating. As shown in Table 4, the 95% bias-corrected bootstrapped confidence intervals (CIs) of the indirect effects did not include zero. Combined with the regression coefficients, the results supported the partial (full) mediating role of T1 (T2) mastery approach goals in the link between T1 authenticity and T2 academic cheating at different time points (see Figures 3 and 4).

Interim Discussion

The results of this study supplemented Study 1 to further confirm the directionality of these associations. First, both at T1 and T2, the results revealed a positive relationship between authenticity and mastery approach goals, and a negative relationship between authenticity/mastery approach goals and academic cheating, indicating a consistent pattern of associations among these three variables. Second, the results of the cross-lagged analysis revealed that authenticity at

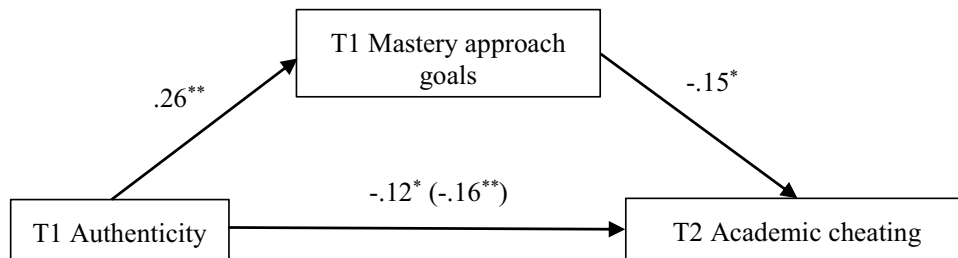


Figure 3 T1 mastery approach goals partially mediate the link between T1 authenticity and T2 academic cheating. Gender, age, T1 academic performance, T1 social desirability, and T1 academic cheating were included as control variables. The value in parentheses is the direct effect of T1 authenticity on T2 academic cheating without including the mediator. All path coefficients were standardized.

Notes: * $p < 0.05$, ** $p < 0.01$. T1 = Time 1, T2 = Time 2.

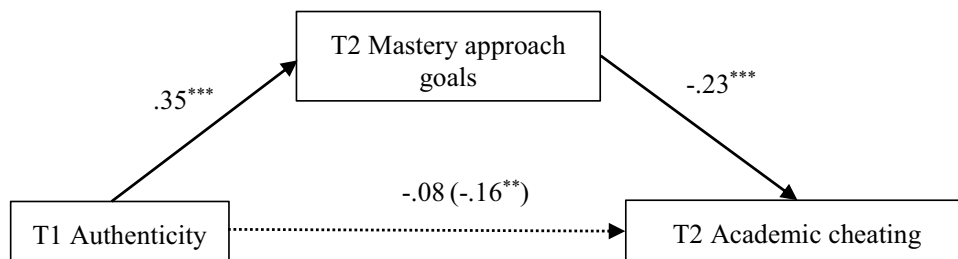


Figure 4 T2 mastery approach goals fully mediate the link between T1 authenticity and T2 academic cheating. Gender, age, T1 academic performance, T1 social desirability, and T1 academic cheating were included as control variables. The value in parentheses is the direct effect of T1 authenticity on T2 academic cheating without including the mediator. All path coefficients were standardized. The dashed pathway is not significant.

Notes: ** $p < 0.05$, *** $p < 0.001$. T1 = Time 1, T2 = Time 2.

T1 significantly predicted mastery approach goals and academic cheating at T2, and mastery approach goals at T1 negatively predicted academic cheating at T2, supporting the proposed directionality of this study's mediation model. Third, the results confirmed the authenticity–mastery approach goals–academic cheating mediation path at different time points, which further supported the robustness of the mediation model.

Discussion

Although authenticity has been found to be an important predictor of several positive outcomes (eg, subjective well-being, interpersonal harmony, and workplace performance),^{17,19,20} the effects of authenticity on academic adaptation remain unclear. To contribute to this gap in prior research, the present study explored the relationship between authenticity and academic cheating, and further examined the mediating role of mastery approach goals. The results demonstrated a negative relationship between authenticity and academic cheating and identified mastery approach goals as a mediating path whereby authenticity results in less academic cheating.

In line with Hypothesis 1, our results revealed a negative relationship between authenticity and academic cheating. Two possible reasons may account for this finding. First, according to the definition of authenticity, authentic people are characterized by their preference for behaving in accordance with their true selves.^{16,17} However, academic cheating is essentially a kind of “faking good” behavior that counteracts individuals' pursuit of their true selves. Therefore, authentic students are less likely to obtain a mendacious score through cheating behavior. Second, there is increasing evidence suggesting that authentic people prefer to behave in morally good ways,^{25,47} indicating a high probability that these people may be less likely to engage in unethical cheating behavior in the learning context.

More importantly, the results from the cross-sectional and two-wave longitudinal data concurrently confirmed the mediating role of mastery approach goals in the relationship between authenticity and academic cheating, supporting Hypotheses 2. Notably, the result of the cross-lagged analysis preliminarily supported the causal direction of this study's mediation model. In summary, this study's results correspond with Murdock and Anderman's viewpoint that motivational processes function as an underlying mechanism whereby individual and contextual factors influence students' propensity to cheat.¹ Additionally, the results also validated the appropriateness of the motivated cognition perspective of personality in explaining the interrelated associations among authenticity, mastery approach goals, and academic cheating.²⁸ According to this model, personality (eg, authenticity) can determine the motivational preferences (eg, adopting mastery approach goals) that students use to cope with evaluative threats (eg, engage in cheating behavior or not). Specifically, authentic people are self-determined by nature and are more likely to hold an incremental mindset that directs them to pursue personal growth and self-improvement,^{16,48} which in turn encourages the development of mastery approach goals.^{30,49} In addition, mastery approach goals may induce students to employ deep learning strategies and focus their attention on mastering new knowledge/skills rather than achieving higher scores than others,^{1,50} which in turn, results in a lower likelihood of engaging in academic cheating behavior.

The current study is one of the first to elucidate the theoretical relationship between authenticity and academic cheating, which extends the existing scope of authenticity research that mainly focuses on its beneficial effects on psychological well-being and workplace performance,^{18,24} and reveals a new personality predictor of academic cheating (other than honesty-humility, the big five, and the dark triad).^{6,10,13} Considering authenticity has a positive link with honesty-humility,^{51,52} future research could further compare the nuanced differences or examine the interacting patterns between these two personality traits in predicting academic cheating. Moreover, this study identified the mediating role of mastery approach goals in the link between authenticity and academic cheating, enriching our understanding of how personality factors influence unethical behaviors in an academic context through motivational preferences, supporting the motivated cognition perspective of personality,²⁸ indicating the necessity of employing an integrated model (ie, including contextual, personalistic, motivational, and cognitive factors) to understand the emergence and development of academic cheating behaviors.^{1,7} Another noteworthy point is that recent research has found that authenticity can be cultivated through career and personal development programs and mindfulness training.^{53,54} Based on our findings, future research could examine the possibility of decreasing students' propensity of engaging in academic cheating behaviors through interventions anchored to the development of authenticity (eg, training on self-reflection and awareness, goal clarification, and interpersonal communication skills) and mastery approach

goals (eg, encourage students to minimize comparisons with others and embrace mistakes and setbacks as opportunities to learn; provide students with positive, diagnostic feedback that focuses on personal improvement).

This study has some limitations. First, the mediating effect of mastery approach goals in the authenticity-academic cheating relationship was relatively small (ranging from -0.03 to -0.08), indicating there may be other potential mediators other than mastery approach goals. Future studies could further examine whether other cognitive (eg, fear of failure), moral (eg, moral disengagement), and affective (eg, academic emotions) variables serve as mediators in this relationship. Second, over-reliance on self-report questionnaires may render possible common method variance in this study's results. Therefore, future studies using objective tests or other reporting measures are encouraged to examine the robustness of this study's findings. Third, like many other studies in this field, neither Study 1 nor Study 2 in our research defines the time frame of academic cheating. This may lead to potential methodological issues when participants evaluate the amount of cheating opportunities (eg, in the last semester vs during one's entire academic career). To overcome this limitation, we encourage future studies to explicitly define the time frame of this construct to avoid unnecessary measurement deviations. Fourth, the relatively smaller sample size of Study 2 may limit the statistical power and generalizability of the findings. Therefore, future studies are encouraged to recruit larger and more heterogeneous (eg, across different educational levels) samples to examine the robustness of our findings.

Ethical Approval

This study was approved by the Research Ethics Committee of Shanghai Normal University (2023-066). All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Acknowledgments

We thank the funding support from Shanghai Humanities and Social Sciences Key Research Base of Psychology (13200-412224-18093) and Program for Professor of Special Appointment at Shanghai Institutions of Higher Education (TP2020013).

Disclosure

The authors report no conflicts of interest in this work.

References

- Murdock TB, Anderman EM. Motivational perspectives on student cheating: toward an integrated model of academic dishonesty. *Educ Psychol.* 2006;41(3):129–145. doi:10.1207/s15326985ep4103_1
- Putarek V, Pavlin-Bernardić N. The role of self-efficacy for self-regulated learning, achievement goals, and engagement in academic cheating. *Eur J Psychol Educ.* 2020;35(3):647–671. doi:10.1007/S10212-019-00443-7
- Cuadrado D, Salgado JF, Moscoso S. Personality, intelligence, and counterproductive academic behaviors: a meta-analysis. *J Pers Soc Psychol.* 2021;120(2):504–537. doi:10.1037/PSPP0000285
- Enweh II, Onyedibe MCC, Onu DU. Academic confidence mediates the link between psychopathy and academic dishonesty. *J Acad Ethics.* 2022;20(4):521–531. doi:10.1007/s10805-021-09426-0
- Zhang J, Paulhus D, Ziegler M. Personality predictors of scholastic cheating in a Chinese sample. *Educ Psychol.* 2019;39(5):572–590. doi:10.1080/01443410.2018.1502414
- Esteves GGL, Oliveira LS, de Andrade JM, Menezes MP. Dark triad predicts academic cheating. *Pers Individ Dif.* 2021;171:110513. doi:10.1016/j.paid.2020.110513
- Lee SD, Kuncel NR, Gau J. Personality, attitude, and demographic correlates of academic dishonesty: a meta-analysis. *Psychol Bull.* 2020;146(11):1042–1058. doi:10.1037/bul0000300
- Srrejekki K, Faturokhman A, Praptapa A, Irianto BS. Understanding academic fraud: the role of dark triad personality and situational factor. *J Crim Justice Educ.* 2023;34(2):147–168. doi:10.1080/10511253.2022.2068630
- Whitley BE. Factors associated with cheating among college students: a review. *Res High Educ.* 1998;39(3):235–274. doi:10.1023/A:1018724900565
- Giluk TL, Postlethwaite BE. Big five personality and academic dishonesty: a meta-analytic review. *Pers Individ Dif.* 2015;72:59–67. doi:10.1016/j.paid.2014.08.027
- Williamson WP, Assadi A. Religious orientation, incentive, self-esteem, and gender as predictors of academic dishonesty: an experimental approach. *Arch Psychol Relig.* 2005;27(1):137–158. doi:10.1163/008467206774355411
- Plessen C, Gyimesi M, Kern B, et al. *Associations Between Academic Dishonesty and Personality: A Pre-Registered Multilevel Meta-Analysis.* PsyArXiv; 2020. doi:10.31234/osf.io/gqkw9r

13. Reinhardt N, Trnka LM, Reinhard MA. The correlation of honesty-humility and learning goals with academic cheating. *Soc Psychol Educ.* 2023;26(1):211–226. doi:10.1007/s11218-022-09742-2
14. Miller AD, Murdock TB, Anderman EM, Poindexter AL. Who are all these cheaters? Characteristics of academically dishonest students. In: Anderman EM, Murdock TB, editors. *Psychology of Academic Cheating*. Elsevier Academic Press; 2007:9–32.
15. Jongman-Sereno KP, Leary MR. The enigma of being yourself: a critical examination of the concept of authenticity. *Rev Gen Psychol.* 2019;23(1):133–142. doi:10.1037/gpr0000157
16. Kernis MH, Goldman BM. A multicomponent conceptualization of authenticity: theory and research. *Adv Exp Soc Psychol.* 2006;38:283–357. doi:10.1016/S0065-2601(06)38006-9
17. Wood AM, Linley PA, Maltby J, Baliousis M, Joseph S. The authentic personality: a theoretical and empirical conceptualization and the development of the authenticity scale. *J Couns Psychol.* 2008;55(3):385–399. doi:10.1037/0022-0167.55.3.385
18. Sutton A. Living the good life: a meta-analysis of authenticity, well-being and engagement. *Pers Individ Dif.* 2020;153:109645. doi:10.1016/j.paid.2019.109645
19. Wickham RE, Williamson RE, Beard CL, Kobayashi CLB, Hirst TW. Authenticity attenuates the negative effects of interpersonal conflict on daily well-being. *J Res Pers.* 2016;60:56–62. doi:10.1016/j.jrp.2015.11.006
20. Van den Bosch R, Taris TW. Authenticity at work: development and validation of an individual authenticity measure at work. *J Happiness Stud.* 2014;15(1):1–18. doi:10.1007/s10902-013-9413-3
21. Xia M, Lv H, Xu X. Validating the Chinese version authenticity scale: psychometrics in college and community samples. *Curr Psychol.* 2022;41(10):7301–7313. doi:10.1007/s12144-020-01326-7
22. Bryan JL, Baker ZG, Tou RY. Prevent the blue, be true to you: authenticity buffers the negative impact of loneliness on alcohol-related problems, physical symptoms, and depressive and anxiety symptoms. *J Health Psychol.* 2017;22(5):605–616. doi:10.1177/1359105315609090
23. Gino F, Kouchaki M, Galinsky AD. The moral virtue of authenticity: how inauthenticity produces feelings of immorality and impurity. *Psychol Sci.* 2015;26(7):983–996. doi:10.1177/0956797615575277
24. Song L, Wang Y, Zhao Y. How employee authenticity shapes work attitudes and behaviors: the mediating role of psychological capital and the moderating role of leader authenticity. *J Bus Psychol.* 2021;36(5):1125–1136. doi:10.1007/s10869-020-09725-0
25. Zhang H, Chen K, Schlegel R, et al. The authentic moral self: dynamic interplay between perceived authenticity and moral behaviors in the workplace. *Collabra Psychol.* 2019;5(1):48. doi:10.1525/collabra.260
26. Christy AG, Seto E, Schlegel RJ, et al. Straying from the righteous path and from ourselves: the interplay between perceptions of morality and self-knowledge. *Pers Soc Psychol Bull.* 2016;42(11):1538–1550. doi:10.1177/0146167216665095
27. De Freitas J, Sarkissian H, Newman GE, et al. Consistent belief in a good true self in misanthropes and three interdependent cultures. *Cogn Sci.* 2018;42(S1):134–160. doi:10.1111/cogs.12505
28. Higgins ET, Scholer AA. When is personality revealed? A motivated cognition approach. In: John OP, Robins RW, Pervin LA, editors. *Handbook of Personality: Theory and Research*. 3rd ed. New York, NY: The Guilford Press; 2008:182–207.
29. Elliot AJ, McGregor HA. A 2 × 2 achievement goal framework. *J Pers Soc Psychol.* 2001;80(3):501–519. doi:10.1037/0022-3514.80.3.501
30. Matsuo M. Antecedents of psychological empowerment: the effects of developmental experience, learning goal orientation and authenticity. *Asia Pac J Hum Resour.* 2021;59(1):44–62. doi:10.1111/1744-7941.12228
31. Guo J, Hu X, Elliot AJ, et al. Mastery-approach goals: a large-scale cross-cultural analysis of antecedents and consequences. *J Pers Soc Psychol.* 2023;125(2):397–420. doi:10.1037/pspp0000436
32. Fritz T, González Cruz H, Janke S, Daumiller M. Elucidating the associations between achievement goals and academic dishonesty: a meta-analysis. *Educ Psychol Rev.* 2023;35(1):33. doi:10.1007/s10648-023-09753-1
33. Krou MR, Fong CJ, Hof MA. Achievement motivation and academic dishonesty: a meta-analytic investigation. *Educ Psychol Rev.* 2021;33(2):427–458. doi:10.1007/s10648-020-09557-7
34. Trost K. Psst, have you ever cheated? A study of academic dishonesty in Sweden. *Assess Eval High Educ.* 2009;34(4):367–376. doi:10.1080/02602930801956067
35. Schoemann AM, Boulton AJ, Short SD. Determining power and sample size for simple and complex mediation models. *Soc Psychol Personal Sci.* 2017;8(4):379–386. doi:10.1177/1948550617715068
36. Volker MA. Reporting effect size estimates in school psychology research. *Psychol Sch.* 2006;43(6):653–672. doi:10.1002/pits.20176
37. An M, Zhang X, Wang Y, Zhao J. Achievement goals among Chinese college students: longitudinal measurement invariance and latent growth analysis. *Curr Psychol.* 2023;42(27):24013–24024. doi:10.1007/s12144-022-03466-4
38. Sun H, Hernandez D. Testing structural invariance of the achievement goal questionnaire in American, Chinese, and Dutch college students. *Meas Eval Couns Dev.* 2012;45(4):257–269. doi:10.1177/0748175612449350
39. Pavlin-Bernardić N, Rovani D, Pavlović J. Academic cheating in mathematics classes: a motivational perspective. *Ethics Behav.* 2017;27(6):486–501. doi:10.1080/10508422.2016.1265891
40. Chisholm M, Cobb H, DiPiro J. Development and validation of a model that predicts the academic ranking of first-year pharmacy students. *Am J Pharm Educ.* 1999;63(4):388–394.
41. Reynolds WM. Development of reliable and valid short forms of the Marlowe-Crowne social desirability scale. *J Clin Psychol.* 1982;38(1):119–125. doi:10.1002/1097-4679(198201)38:1<119::AID-JCLP2270380118>3.0.CO;2-I
42. Hayes AF. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. 2nd ed. New York, NY: The Guilford Press; 2018.
43. Kline RB. *Principles and Practice of Structural Equation Modeling*. 4th ed. New York: The Guilford Press; 2016.
44. Fiedler K, Harris C, Schott M. Unwarranted inferences from statistical mediation tests: an analysis of articles published in 2015. *J Exp Soc Psychol.* 2018;75:95–102. doi:10.1016/j.jesp.2017.11.008
45. Maxwell SE, Cole DA. Bias in cross-sectional analyses of longitudinal mediation. *Psychol Methods.* 2007;12(1):23–44. doi:10.1037/1082-989X.12.1.23
46. Muthen LK, Muthen BO. How to use a Monte Carlo study to decide on sample size and determine power. *Struct Equ Modeling.* 2002;9(4):599–620. doi:10.1207/S15328007SEM0904_8

47. Trnka R, Kuška M, Tavel P, Kubena A. Social work leaders' authenticity positively influences their dispositions toward ethical decision-making. *Eur J Soc Work*. 2020;23(5):809–825. doi:10.1080/13691457.2019.1608513
48. Emmerich AI, Rigotti T. Reciprocal relations between work-related authenticity and intrinsic motivation, work ability and depressivity: a two-wave study. *Front Psychol*. 2017;8:307. doi:10.3389/FPSYG.2017.00307
49. Babenko O, Oswald A. The roles of basic psychological needs, self-compassion, and self-efficacy in the development of mastery goals among medical students. *Med Teach*. 2019;41(4):478–481. doi:10.1080/0142159X.2018.1442564
50. Leenknecht M, Hompus P, van der Schaaf M. Feedback seeking behaviour in higher education: the association with students' goal orientation and deep learning approach. *Assess Eval High Educ*. 2019;44(7):1069–1078. doi:10.1080/02602938.2019.1571161
51. Oc B, Daniels M, Diefendorff J, Bashshur M, Greguras G. Humility breeds authenticity: how authentic leader humility shapes follower vulnerability and felt authenticity. *Organ Behav Hum Decis Process*. 2021;158:112–125. doi:10.1016/j.obhdp.2019.04.008
52. Rigolizzo M, Zhu Z, Harvey J. Leader humility, leader authenticity and informal learning: how humble team leaders model everyday workplace learning. *J Workplace Learn*. 2022;34(8):691–706. doi:10.1108/JWL-01-2022-0010
53. Kipfelsberger P, Braun S, Fladerer MP, Dragoni L. Developing authenticity: a quasi-experimental investigation. *Pers Individ Dif*. 2022;198:111825. doi:10.1016/j.paid.2022.111825
54. Ye S, Song L, Wang Y, Pang J. Mindfulness at work: an approach to enhancing employee authenticity and well-being. *Chin J Clin Psychol*. 2019;27(4):843–847. doi:10.16128/j.cnki.1005-3611.2019.04.042

Psychology Research and Behavior Management

Dovepress

Publish your work in this journal

Psychology Research and Behavior Management is an international, peer-reviewed, open access journal focusing on the science of psychology and its application in behavior management to develop improved outcomes in the clinical, educational, sports and business arenas. Specific topics covered in the journal include: Neuroscience, memory and decision making; Behavior modification and management; Clinical applications; Business and sports performance management; Social and developmental studies; Animal studies. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/psychology-research-and-behavior-management-journal>