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Performing like a Learning Machine: The Emphasis on Performance Goals Results in Self-Objectification

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Abstract

Little attention has been given to self-objectification, which refers to viewing oneself as an instrument or object rather than a full human, in an educational context. To address this gap, the current research aims to test self-objectification among students, and we hypothesized that a performance goal orientation would result in self-objectification (H1), which would further predict reduced authenticity (H2). Six studies (N = 1,716) confirmed our hypotheses. Studies 1-2, employing cross-sectional and 2-wave designs, found a positive association between a performance goal orientation and self-objectification among college students. Study 3 further showed the link among middle school students (i.e., adolescents). Studies 4-5b employed experimental methodologies to demonstrate the causal relationship between the performance goal orientation and self-objectification. In addition, increased self-objectification triggered by the performance goal orientation was further related to reduced authenticity (Studies 3-5b). This work advances the understanding of self-objectification in the educational domain.

Keywords: self-objectification, performance goal orientation, authenticity, goal pursuit, students

Performing like a Learning Machine: The Emphasis on Performance Goals Results in Self-Objectification

"If you were a machine, school would be perfect … We are students, not machines."

– By Kalil Magtoto (2020), retrieved from *Imprint*, the official student newspaper of the University of Waterloo.

Although there is no doubt that humans belong to the physical realm, an increasing body of research suggests that attributing humanness to oneself can be subject to change (Haslam & Loughnan, 2014). For instance, individuals occasionally perceive themselves as tools or machines, a phenomenon referred to as self-objectification (Nussbaum, 1995). While self-objectification has received significant research attention in the domains of sexuality and work (i.e., sexual and workplace objectification; Baldissarri et al., 2022b; Moradi & Huang, 2008), its presence in educational contexts has largely been overlooked in previous studies. The present research aims to address this gap by examining the occurrence and determinants of self-objectification within educational settings.

In most contemporary societies, the school system serves not only to equip each student to become a productive member of society, but also to channel the most capable students into prestigious positions (Darnon et al., 2009; Dornbusch et al., 1996). To fulfill this selection function, schools establish various external criteria, such as grades and rankings, to evaluate and compare students (Batruch et al., 2019; Pulfrey et al., 2011). Throughout this process, a significant number of students predominantly adopt goals focused on outperforming others and achieving superior grades, known as a performance goal orientation (Dweck, 1986). The primary aim of the current study is to investigate whether a performance goal orientation influences self-objectification. The secondary aim is to examine whether self-objectification, if present due to the performance goal orientation, is further associated with decreased authenticity.

Self-objectification

Objectification is defined as the treatment of other individuals (targets) as objects or tools that can be used or exploited, disregarding their needs, autonomy, and feelings (Nussbaum, 1995). Objectification, as one of the most harmful patterns of interpersonal interaction, has been linked to numerous negative consequences. Crucially, when individuals are consistently exposed to an objectified environment, they may internalize others' perspectives and exhibit self-objectification (Fredrickson & Roberts, 1997; Loughnan et al., 2017). Self-objectification refers to perceiving oneself as an instrument or an object that lacks essential personhood (Baldissarri & Andrighetto, 2021; Nussbaum, 1995; Wang et al., 2022a). In line with objectification, self-objectification includes two key dimensions: perceiving oneself as instrument-like (i.e., self-instrumentality) and denying oneself essential human traits (i.e., self-deprivation of humanness, see LaCroix & Pratto, 2015; Wang et al., 2022a).

The phenomenon of self-objectification was initially recognized by feminist researchers. This occurs when individuals, typically women, internalize an external observer's perspective that reduces them to mere sexual objects (Fredrickson & Roberts, 1997). Consequently, they often engage in frequent body surveillance while disregarding aspects of their own personhood, such as their personalities and inner thoughts (Moradi & Huang, 2008). Sexual self-objectification can be triggered by many factors, both at the macro- (e.g., sexism ideology, ideal body norms, and social power; Frederick et al., 2022; Riemer et al., 2014; Xiao et al., 2019) and interpersonal levels (e.g., experienced body gaze in social interaction, social networking exposure, and appearance-related comments; Hollett et al., 2022; Slater & Tiggemann, 2015). In addition to the sexual domain, previous research has delved into self-objectification in the workplace. This phenomenon entails employees internalizing the perspective of others and viewing themselves as instruments, devoid of human essentials (Baldissarri & Andrighetto, 2021). Workplace self-objectification can occur due to factors

such as power inequality in work relationships (Gruenfeld et al., 2008), objectifying characteristics of working tasks (i.e., fragmentation, repetitiveness, and other-directedness), and instrumental treatment by others in the workplace (Baldissarri & Andrighetto, 2021). In fact, self-objectification in the sexual and workplace domains are two specific forms of self-objectification, and it could expand to a broader realm of human life.

Despite the inherent aim of education is to foster students' intrinsic development, personal growth, and self-actualization (Matusov & Marjanovic-Shane, 2019), students often perceive themselves as less autonomous throughout the educational process (Henri et al., 2018). In fact, in educational settings, with the expanding demands and evaluations related to academic or material success, students report experiencing burnout across different cultures and age groups (e.g., Walburg, 2014; Zhang et al., 2007), showing reduced mental vigor and engagement in learning (Salmela-Aro et al., 2008; King & Datu, 2017), and becoming pragmatic (Teuber et al., 2021), all of which are related to the manifestation of self-objectification (Valtorta et al., 2022). However, empirical work examining students' self-objectification is still in its infancy. To address this literature gap, the present research aims to present the first empirical evidence of the phenomenon of self-objectification in education.

A Performance Goal Orientation and Self-Objectification

Goal orientations refer to how students cope with various achievement situations, reflecting the approaches they adopt and the standards they use to evaluate their learning (Ames, 1992). In the goal orientation framework, early researchers have generally classified two types of goal orientations, labelled performance versus mastery (Dweck, 1986; Meece et al., 2006), which align with other dichotomous models such as learning versus performance, task- versus ego-involved, and task- versus ability-focused goals (e.g., Ames, 1992; Nicholls, 1984). A performance goal orientation entails a motivational pattern in which students focus on demonstrating their competence and the outcome of learning. Importantly, students with

performance goals evaluate their performance through social comparison (e.g., either to outperform peers or avoid lagging behind, Nicholls, 1984). In addition, goal theorists further proposed a trichotomous model which divided performance goals into two sub-categories (Elliot & Harackiewicz, 1996; Elliot & McGregor, 2001): performance-approach goals (i.e., demonstrating competence and pursuing success) and performance-avoidance goals (i.e., avoiding showing incompetence and failure). In contrast, a mastery goal orientation entails focusing on intrapersonal learning standards (e.g., becoming the best you can be; Dweck, 1986). Goal orientations can manifest at both the trait and state levels. At the trait level, performance and mastery goal orientations are relatively stable personal characteristics that can be predicted by other dispositional factors, such as personality traits (Payne et al., 2007). At the state level, goal orientations exhibit significant situational properties, as they can vary across different domains or activities (Beck & Schmidt, 2012).

In general, performance goals can be maladaptive and trigger various detrimental consequences including negative cognition, affects, and behaviors (Spinath & Stiensmeier-Pelster, 2003). For example, students with a performance goal orientation are more likely to demonstrate decreased persistence when faced with challenging situations (Dweck, 1986; Dweck & Leggett, 1988), consider failure as proof of their incompetency (Elliott & Dweck, 1988), and experience increased distress in the long run (Bieling et al., 2003). When students perceive performance goals as dominant in a classroom environment, they tend to focus more on negative evaluation and feel reduced positive emotions in learning (Ames & Archer, 1988; Fisher et al., 2013). Moreover, students with a performance goal orientation report reduced levels of cognitive engagement (Meece et al., 1988) and decreased intrinsic motivation (Spinath & Steinmayr, 2012) compared to those oriented by mastery goals. Interestingly, performance goals may, to some extent, match the beneficial effects of mastery goals in predicting students' academic performance (Linnenbrink-Garcia et al., 2008; Senko, 2019),

and this effect was supported longitudinally (Harackiewicz et al., 2000; Harackiewicz et al., 2002). A recent meta-analysis extended this adaptive aspect to a range of other educational outcomes, including deep learning strategy, positive affect, and enjoyment (Senko & Dawson, 2017). However, compared to most negative effects associated with a performance goal orientation, these positive effects are restricted to the normative type of performance goals, which refer to focusing on performing better (Urhahne & Wijnia, 2023; Hulleman et al., 2010). Although various impacts on students' learning and performance brought on by a performance goal have been documented, little is known about how a performance goal orientation affects students' self-perception. This issue is important because self-perception not only influences how we feel about ourselves, including our sense of self-worth, but also shapes our motivations, attitudes, and behaviors (Baumeister, 1999). Put differently, exploring this topic can provide a more fundamental understanding of the broad impact of performance goals on students' psychology and behavior.

We argue that a performance goal orientation could result in self-objectification (i.e., self-instrumentality and self-deprivation of humanness) among students for the following reasons. Having a performance goal, either to outperform peers or to avoid lagging behind, entails demonstrating one's abilities aligned with external standards (Dweck, 1986). That is, learning activities driven by a performance goal are targeted for assessment, such as examinations (Meece et al., 2006). This can lead students to perceive themselves through the perspectives of others (Weissman & Elliot, 2023). In other words, to demonstrate high performance is, to a large extent, to meet the expectations of others and be judged and recognized by others (Kaplan & Maehr, 2007). To facilitate this process, students could reduce themselves to instruments or tools, functioning to satisfy other people and to be useful for others (i.e., self-instrumentality). Preliminary support comes from classical sexual objectification theory, which posits that women see themselves as sexual instruments when

they internalize external beauty ideals and view themselves from an observer's perspective (Fredrickson & Roberts, 1997). In parallel, when students adopt a performance goal orientation, they primarily focus on the interpersonal judgements about how their abilities are evaluated in relation to their peers (whether they outperform or avoid falling behind; Weissman & Elliot, 2023), while intrinsic factors such as personal growth, experience, and uniqueness tend to be overlooked (Kaplan & Maehr, 2007). Needless to say, these intrinsic factors are considered critical components of essential human traits (Haslam, 2006). In addition, students with such a goal would consistently engage in social comparisons, thus viewing peers more as competitors instead of collaborators (Darnon et al., 2006; Poortvliet & Darnon, 2010) and showing less openness to sharing information with others (Poortvliet et al., 2007). Since peer relationships are crucial for students (Wentzel & Caldwell, 1997), performance-oriented individuals could easily experience impaired social bonding. It has already been shown that reduced social bonding is a significant contributor to impaired humanness attribution to oneself (e.g., Bastian et al., 2013; Cheng & Wang, 2023). Finally, when a student's primary concern is to showcase their abilities or avoid appearing incompetent, cheating can be seen as an effective means to achieve these goals (Anderman, 2007; Pulfrey & Butera, 2013). Meanwhile, involvement in immoral behavior has been found to be positively linked to denying one's humanness, as it may subtly alleviate feelings of guilt or responsibility for such actions (Kouchaki et al., 2018). Considering these factors collectively, it is highly plausible that a performance goal orientation may diminish the attribution of human characteristics to oneself (i.e., self-deprivation of humanness).

A Downstream Consequence: Reduced Authenticity

Authenticity is defined as “the sense or feeling that one is currently in alignment with one’s true or genuine self and that one is being his or her real self” (Sedikides et al., 2017, p. 521). In other words, authenticity represents the individual’s inner genuine self. The authentic

personality model conceptualizes authenticity in three dimensions: self-alienation (the variation between one's conscious awareness and actual experience), authentic living (the consistency between the expression and conscious awareness of mental and behavioral states), and accepting external influence (the extent to which the individual is affected by the external environment). According to humanism and positive psychology, authenticity is a key determinant in self-actualization and optimal functioning (Maslow, 1971; Rogers, 1961). Similarly, Harter (2002) argued that knowing and acting in congruence with one's true self are fundamental elements of a good life. Indeed, authenticity is well-documented to be associated with multiple positive outcomes, including well-being, life satisfaction, self-esteem, perceived meaning in life, and moral behavior (e.g., Lutz et al., 2023; Sedikides et al., 2017; Ryan & Ryan, 2019; Kim et al., 2018). Given the strong link between authenticity and healthy psychological functioning, the current research explores whether self-objectification caused by performance-oriented goals is further related to authenticity.

We propose that self-objectification contributes to diminished authenticity among students. First, individuals who self-objectify perceive themselves as passive entities influenced by external forces, thereby exhibiting reduced awareness of their own thoughts, emotions, experiences, and internal state. However, unbiased and deep self-consciousness serves as a fundamental prerequisite for experiencing authenticity (Kernis & Goldman, 2006). Second, an authentic self is characterized by self-determination and self-actualization (Conn, 1998; Ryan & Ryan, 2019). However, individuals who objectify themselves are more prone to accept external influence and have weaker motivation to pursue personal growth (Wang et al., 2022b), as they primarily attribute their self-worth to the fulfilment of others' requirements (Belmi & Schroeder, 2021) and their instrumental attributes valued by other people (Wang et al., 2022a; Wang et al., 2022b). In other words, these people are more motivated and affected by externally imposed standards, resulting in alienation from their

true selves (Cheng et al., 2022). Finally, self-objectifiers are likely to show reduced authentic living, as they may experience inconsistency between their expression and conscious awareness. For example, prior studies have found that self-objectifiers are more likely to conform to others' ideas (Andrighetto et al., 2018) and show reduced autonomy (Baldissarri et al., 2017). Therefore, we hypothesized that the increased self-objectification caused by the performance goal orientation is further related to decreased authenticity.

The Present Study

The present research aimed to test the relationship between a performance goal orientation and self-objectification among students (H1). In addition, we examined whether self-objectification caused by the performance goal orientation could further predict reduced authenticity (H2). Notably, since self-objectification encompasses two dimensions: self-instrumentality and self-deprivation of humanness (Haslam et al., 2013; LaCroix & Pratto, 2015; Wang et al., 2022a), the current research examined the role of performance-oriented goals in self-objectification, considering both dimensions (self-instrumentality in Studies 1 & 2; self-instrumentality and self-deprivation of humanness in Studies 3-5b).

To this end, we first explored the association between trait-level performance goal orientation and self-objectification using cross-sectional (Study 1) and 2-wave (Study 2) methods among college students. To test whether this effect could emerge early, we investigated this effect among middle school participants (i.e., adolescents, Study 3). Of equal importance, we tested reduced authenticity as a potential downstream effect. In Studies 4-5b, to directly investigate the causal relationship, experiments with random assignments were designed to examine whether highlighting a performance-oriented goal could result in self-objectification, which further predicts reduced authenticity among students. To rule out the possibility that self-objectification was merely due to goal pursuit, we included a mastery goal-oriented condition in the final two studies (Studies 5a and 5b). To test the prevalence of

the effect and to avoid a skewed understanding of human behavior due to sample and cultural homogeneity, we recruited participants from China (Studies 4 and 5b) and the United Kingdom (Study 5a). To provide rigorous tests of our hypotheses, we have controlled various extraneous variables, including participants' age, gender, and subjective social class (Studies 1-5b), annual household income (Study 1), parents' education level (Study 1), grade point average (GPA) ranking (Study 2), self-efficacy (Study 2), emotions (Study 2), time pressure (Study 2), and self-esteem (Studies 1 and 2).

Sample Size Determination

For cross-sectional correlational Studies (Study 1 and 3), 250 participants were required for stable estimates of bivariate correlations (Schönbrodt & Perugini, 2013). For cross-lagged effects (Study 2), with the benchmark value for a medium effect size of Cohen's $d = 0.07$ (structural equation modeling; Orth et al., 2022) and following prior two-wave research (Issmer & Wagner, 2015), we targeted a sample size of 300 participants. For experimental studies with random assignments, following recent studies (Chen et al., 2023; Wang et al., 2021b; 2022b), we targeted 100 participants for each condition (Studies 4-5b). The sample sizes determined above surpassed the thresholds suggested by the priori power analysis (see Supplementary Materials). Sensitivity power analyses (Faul et al., 2009) revealed that minimum effect sizes of $f = .16$ (Study 1, $N = 300$), $f = .16$ (Study 2, $N = 308$), $f = .16$ (Study 3, $N = 303$), $f = .19$ (Study 4, $N = 219$), $f = .19$ (Study 5a, $N = 277$), and $f = .18$ (Study 5b, $N = 309$) could be detected under standard criteria ($\alpha = .05$, 80% power).

Except those in Study 3, all participants received a small amount of compensation at the end of the study.

Study materials and data can be accessed via https://osf.io/skfe3/?view_only=ee03283a404641a5ae7918d2d40ce98c

Study 1

Study 1 is to preliminarily test the correlation between trait-level performance goal orientation and self-objectification, captured by self-instrumentality, which is considered the most crucial dimension of objectification (e.g., Gruenfeld et al., 2008; Nussbaum, 1995; Wang et al., 2022a). We predicted that a performance goal orientation would positively relate to self-instrumentality (H1). In addition, since previous research has found that self-esteem is associated with self-objectification (Barzoki et al., 2018), we measured participants' self-esteem as a control variable.

Method

Participants

Three hundred and six Chinese college students were recruited via Credamo. Six participants failed an attention check, resulting in 300 participants (211 women; M_{age} = 21.94, *SD* = 2.91) in the final analysis.

Measures

Performance goal orientation. Participants' performance goal orientation was measured by two subscales from Goal Orientation Scales (Ability-Approach and Ability-Avoidance Goal Orientations; Midgley et al. 1998). These two subscales included 12 items, and example items are: "I want to do better than other students in my department or college (approach; α = .88)" and "One of my main goals is to avoid looking like I can't do my work (avoidance; α = .69)". Participants gave responses on a 7-point Likert Scale (1 = *strongly disagree*, 7 = *strongly agree*). An overall performance goal orientation score was calculated by averaging the scores across items, with higher scores reflecting higher levels of performance goal orientation (α = .80).

Self-instrumentality. We adopted the 8-item Self-Instrumentality Scale developed by Wang et al. (2022a). Example items are: "The best way to acquire one's position in a group is to be useful to others" and "How I can help others achieve their goals is more important than

how I think or feel". Participants gave responses on a 7-point Likert Scale (1 = *strongly disagree*, 7 = *strongly agree*). An overall self-instrumentality score was caculated by averaging the scores across items, with higher scores referring to higher levels of self-instrumentality (α = .76).

Self-Esteem. Self-esteem was measured by the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965). Sample items include "On the whole, I am satisfied with myself" and "At times I think I am no good at all" (1 = *strongly disagree*, 7 = *strongly agree*). An overall self-esteem score was caculated by averaging the scores across items, with higher scores referring to higher levels of self-esteem (α = .90).

Finally, participants reported demographic information, including age, gender, annual household income, the education levels of self and parents, and subjective social class (Adler et al., 2000) before they were thanked and debriefed.

Results and Discussion

As shown in Table 1, the correlation between the performance goal orientation and self-instrumentality was significant, $r(300) = .39$, $p < .001$[1]. Regression analysis showed that after controlling for self-esteem and demographic variables, a performance goal orientation could still positively predict self-instrumentality, $\beta = .42$, $t = 7.78$, $p < .001$, 95% CI [0.330, 0.554].

Table 1

Mean, SD, and Bivariate Correlation for All Study Variables in Study 1

Variables	*M*	*SD*	1	2	3	4
1. Performance goal orientation	4.97	0.80				
2. PAGO	4.99	1.08	.83***			
3. PVGO	4.96	0.92	.76***	.28***		

[1] The same pattern emerged for both dimensions of performance goal orientation (performance-approach: $r(300) = .37$, $p < .001$; performance-avoidance $r(300) = .25$, $p < .001$).

4. Self-Instrumentality	4.77	0.85	.39***	.37***	.25***	
5. Self-Esteem	4.97	1.02	.10	.30***	–.18**	–.05

Note. $N = 300$. PAGO = Performance-approach goal orientation. PVGO = Performance-avoidance goal orientation.

*** $p < .001$, ** $p < .01$

Therefore, Study 1 provided initial empirical evidence that students who focus more on performance goals in their learning show a higher tendency to self-objectify, treating themselves as tools for goal achievement.

Study 2

Study 2 is to test further the long-term association between a performance goal orientation and self-objectification using a 2-wave study. We expected a lagged effect of the earlier performance goal orientation on self-objectification at a later time (H1). To rule out alternative explanations, we measured and controlled academic performance, time pressure, positive and negative affects, and self-efficacy since previous studies have shown that they are either related to a performance goal orientation or self-objectification (e.g., Beck & Schmidt, 2012; Breitwieser & Brod, 2022).

Method

Participants

We initially recruited 443 college students from two universities in Mainland China. Three hundred and eight participants completed both waves of studies, leaving a total of 308 (193 women; M_{age} = 20.57 years, SD = 1.23) in the final analysis (total attrition rate = 30.4%[2]).

Procedure

[2] We conducted an attrition analysis using data from the 135 participants (78 women; M_{age} = 20.57 years, SD = 1.76) who dropped in Wave 2. Results showed that the attrition group and the valid group (N = 308) did not differ significantly on performance goal orientation ($M_{attrition}$ = 4.52, SD = 1.01; M_{valid} = 4.51, SD = 0.97; $t(441) = 0.07$, $p = .944$), or self-instrumentality ($M_{attrition}$ = 4.34, SD = 1.03; M_{valid} = 4.25, SD = 1.07; $t(441) = 0.79$, $p = .428$).

Data collection was conducted in May and late June 2023. It was ensured that data collection was conducted with a one-month interval between the two waves. The performance goal orientation and self-objectification were measured in both waves to examine cross-sectional relationships and associations over time.

Measures

Performance Goal Orientation. Participants' performance goal orientation was measured using the same scales as in Study 1 (α_{wave_1} =.87; α_{wave_2} =.86).

Self-Instrumentality. We adopted the same scale as Study 1 to measure participants' self-objectification (α_{wave_1} =.83; α_{wave_2} =.85).

Control Variables. First, participants' grade point average (GPA) ranking was reported on a 5-point scale (1 = top 20% in the college/department; 5 = bottom 20% in the college/department; measured at both waves). Second, participants' self-efficacy was measured using the 8-item General Self-Efficacy Scale (Chen et al., 2001; measured at both waves; α_{wave_1} =.87; α_{wave_2} =.86). Third, participants' affects were measured by 4 items (2 positives and 2 negatives), example items include "Right now, I feel happy" and "Right now, I feel upset" (measured at both waves, α_{wave_1} = .85; α_{wave_2} = .86). We also measured the perceived time pressure of learning by adapting the scale in previous studies (Beck & Schmidt, 2012; e.g., "I am studying under excessive time pressure"; measured at both waves; α_{wave_1} = .84; α_{wave_2} = .83). Finally, same as in Study 1, we controlled for participants' self-esteem (measured at both waves), gender, age, and subjective social class (measured at Wave 1 only).

Results and Discussion

As shown in Table 2, in each wave, the performance goal orientation was positively related to self-instrumentality [$r(308)_{wave\_1}$ = .64, $r(308)_{wave\_2}$ = .57, ps < .001], which is consistent with our findings of Study 1.

To examine the lagged effect of the performance goal orientation on self-objectification, a cross-lagged panel model (CLPM) was computed using Mplus 8.3 (Muthén & Muthén, 2017; see supplementary materials for model details). Participants' GPA ranking, self-efficacy, affects, time pressure, self-esteem, and demographics were entered as covariates. As shown in Figure 1, the path from the performance goal orientation (Wave 1) to subsequent self-instrumentality (Wave 2) was significant ($\beta = .12$, $p = .034$, 95% CI [0.009, 0.234]; $\chi^2 = 18.66$, $df = 24$, $p = .770$; CFI = 1.000, TLI = 1.025, RMSEA < .001, SRMR = .022). In contrast, the path from earlier self-instrumentality (Wave 1) to subsequent performance goal orientation (Wave 2) was not significant ($\beta = .009$, $p = .873$). Therefore, Study 2 further revealed the association between a performance goal orientation and self-objectification over time.

Table 2

Mean, SD, and Bivariate Correlation for All Study Variables in Study 2

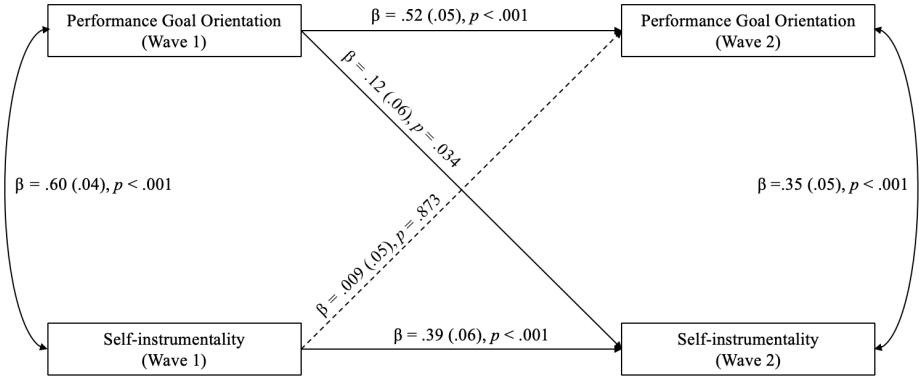
Variables	*M*	*SD*	1	2	3
1. Performance Goal Orientation (W1)	4.51	0.97			
2. Self-Instrumentality (W1)	4.25	1.07	.64***		
3. Performance Goal Orientation (W2)	4.72	0.92	.60***	.41***	
4. Self-Instrumentality (W2)	4.38	1.02	.45***	.55***	.57***

Note. $N = 308$.

*** $p < .001$.

Figure 1

Results of the Cross-lagged Panel Model, Study 2



Note. Dashed line represents insignificant paths. Standardized estimates are reported. Standard errors are shown in parentheses. Figure showed results after controlling for all covariates.

Study 3

Although we consistently found the association between a performance goal orientation and self-objectification in Studies 1 and 2, participants were limited to college students (i.e., adults) so far. From a developmental perspective, younger students are less likely to evaluate their performance via social comparison (Bong, 2009; Nicholls, 1984), and hence, younger students may be less subjective to the negative impact of a performance goal orientation. In other words, showing the link between a performance goal and self-objectification appearing early in human development can prove the robustness of the effect. To this end, we recruited middle school students (i.e., adolescents) in Study 3. Considering the characteristics of our sample, we employed a more explicit measure of self-objectification to enhance ease of understanding. Of equal importance, authenticity was included as a potential downstream consequence of self-objectification. We expected that a performance goal orientation would be positively related to self-objectification (H1), and this would further be associated with reduced authenticity (H2).

Method

Participants

We recruited 303 middle school students in China (174 girls, M_{age} = 15.20, *SD* = 1.38). Informed consent was obtained from their parents or guardians.

Procedures and Measures

First, all participants were asked to recall and write a short paragraph about their recent learning experience. Specifically, they were told to write down the time, place, and what they learned from the experience. Then, participants were presented with a checklist constructed based on typical examples in goal literature (Ames & Archer, 1988; Elliot & McGregor, 2001). Specifically, the checklist included six options, three of which were performance goals (i.e., getting high grades, outperforming peers, and demonstrating grade achievement), and the other three were non-performance goals (i.e., thoroughly understanding the knowledge, improving competence, and exploring something new). To better capture the prioritization of the performance goals over non-performance goals, students were asked to choose three goals that they adopted in the experience they just recalled. The choice of each performance goal was coded as 1, and each non-performance goal was coded as 0. A composite performance score was calculated by adding up the scores, with higher scores indicating higher levels of the performance goal orientation.

To assess self-objectification more directly, we utilized the scale developed by Baldissarri and Andrighetto (2021). Specifically, participants reported how similar they believe (1 = *not similar at all*; 7 = *extremely similar*) they were to 5 object items (i.e., instrument, tool, thing, machine, device) in their recent learning experience. The scores were averaged to form an overall score of self-objectification ($\alpha = .94$), with higher scores indicating greater self-objectification.

Next, we adapted the 12-item scale developed by Wood et al. (2008) to measure participants' state authenticity. Example items are "I stand by what I believe in" and "I don't know how I really feel inside (reverse coded)" (1 = *strongly disagree*; 7 = *strongly agree*). The overall authenticity score was calculated by averaging the scores of these items, with the higher score reflecting higher levels of authenticity ($\alpha = .84$).

Finally, participants reported their age, gender, and subjective social class as in Study 1.

Results and Discussion

As shown in Table 3, among middle school students, a performance goal orientation was positively associated with self-objectification, $r(303) = .23$, $p < .001$, and negatively associated with authenticity, $r(303) = –.29$, $p < .001$. In addition, self-objectification was also negatively associated with authenticity, $r(303) = – .48$, $p < .001$. Regression analyses showed that the predicting effect of the performance goal orientation remained significant after controlling for age, gender, and subjective social class; self-objectification: $\beta = .25$, $t = 4.47$, $p < .001$, 95% CI [0.209, 0.538]; authenticity: $\beta = –.30$, $t = –5.28$, $p < .001$, 95% CI [–0.507, –0.231].

Table 3

Mean, SD, and Bivariate Correlation for Core Variables in Study 3

Variables	*M*	*SD*	1	2
1. Performance goal orientation	0.94	0.96		
2. Self-objectification	1.94	1.41	.23***	
3. Authenticity	4.58	1.19	–.29***	–.48***

Note. $N = 303$.

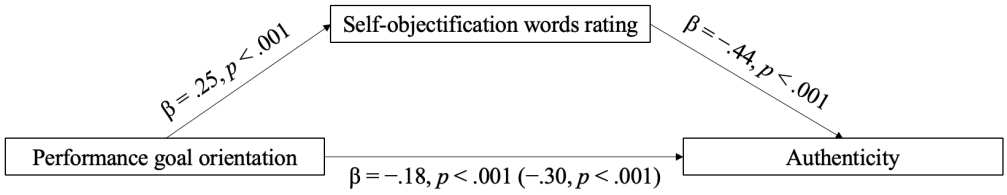
*** $p < .001$.

Authenticity as a Downstream Consequence. We conducted mediation analysis via the PROCESS macro (model 4, SPSS; 5000 resampled, Hayes, 2013), with the performance goal orientation, self-objectification, and authenticity as the predictor, the mediator, and the outcome variable. In addition, participants' gender, age, and subjective social class were entered as covariates. The result showed that the indirect effect was significant, $\beta = –.11$, SE = .03, 95% CI [–0.171, –0.053] (see Figure 2), suggesting that self-objectification could explain the effect of the performance goal orientation on reduced authenticity.

In Study 3, we replicated the relationship between the performance goal orientation and self-objectification among middle school students (H1). In addition, we found that self-objectification predicted by the performance goal orientation could be further associated with perceived authenticity (H2).

Figure 2.

Authenticity as the downstream effect of the association between the performance goal orientation and self-objectification (Study 3)



Note. Standardized coefficients are reported. Total effect coefficient was shown in parentheses.

Study 4

Studies 1-3 consistently found a positive association between a performance goal orientation and self-objectification using cross-sectional and 2-wave designs, employing participants of both adults and adolescents. Study 4 is to further examine the causal link between a performance goal orientation and self-objectification using an experimental design. To this end, participants were randomly assigned to either a performance goal condition or a control condition. We expected that students in the performance goal condition would report a higher level of self-objectification than those in the control condition (H1). In addition, self-objectification caused by a performance goal would further predict authenticity (H2).

Method

Participants

Two hundred and twenty Chinese college participants were recruited from Credamo. After excluding one participant who failed an attention check, 219 students (127 women; M_{age} = 23.43, *SD* = 7.62) were included in the analysis. Students were randomly assigned to a performance (*N* = 109) or a control condition (*N* = 110).

Procedures and Measures

To manipulate performance goal, participants were informed that they need to attend an introductory psychology course in the coming semester, and they viewed the outline of this course, including the time, course credit, and main topics (e.g., "Social interaction" and "Learning and memory") for each week. Next, participants were randomly assigned to one of the two conditions (performance goal vs. control).

In the performance goal condition, participants were presented with eight comments on the course from previous students. These comments were based on the eight dimensions of classroom climate with a performance goal orientation (Ames & Archer, 1988) and indicated that the course focused on performance goals. Example comments are: "In this course, we study hard just because we want to get higher marks and perform better than others" and "In this course, we place great importance on showing our ability and proficiency through exams". In the control condition, no additional information was presented. Participants in both conditions were asked to write down their feelings about this course in a short paragraph.

Then, as a manipulation check, participants were presented with the checklist as in Study 3, and they were asked to choose three goals that they want to pursue when taking this course. As in Study 3, a composite performance score was calculated by summing up the total number of performance goals picked, with higher scores indicating higher levels of the performance goal orientation.

Students subsequently finished the same self-instrumentality scale used in Study 1 (α = .87), the 5-item self-objectification words rating scale (α = .96) and the authenticity scale used in Study 3 (α = .95).

Finally, students responded to the same demographic questions as in Study 3.

Results and Discussion

Manipulation Check

An independent-sample *t*-test showed that students in the performance goal condition (*M* = 2.51, *SD* = 0.79) chose more performance goals than those in the control condition (*M* = 0.53, *SD* = 0.71), $t(217) = 19.55$, $p < .001$, Cohen's $d = 2.64$, validating our manipulation method.

Main Effects

In line with our hypothesis, participants in the performance goal condition reported a higher level of self-objectification (self-instrumentality: *M* = 5.10; *SD* = 0.92; self-objectification words rating: *M* = 4.47; *SD* = 1.63) than those in the control condition (self-instrumentality*: M* = 3.98; *SD* = 1.08; self-objectification words rating: *M* = 2.22; *SD* = 1.12), $F(1, 217) = 68.25$, $p < .001$, $\eta_p^2 = .24$; $F(1, 217) = 142.29$, $p < .001$, $\eta_p^2 = .40$, respectively. Consistent with our hypothesis, the level of authenticity in performance goal condition (*M* = 3.31; *SD* = 1.32) was lower than that in control condition (*M* = 5.04; *SD* = 0.90), $F(1, 217) = 128.88$, $p < .001$, $\eta_p^2 = .37$.

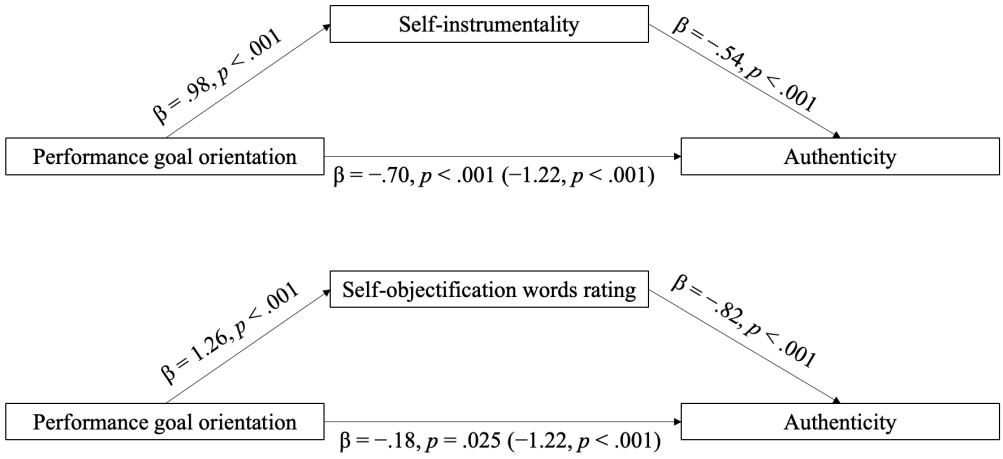
Authenticity as a Downstream Consequence

A mediation analysis (PROCESS, model 4; 5000 resampled; Hayes, 2013) was conducted to further examine whether the effect of the performance goal orientation on authenticity could be accounted for by self-objectification (measured by self-instrumentality and self-objectification words rating, respectively). The results showed that the indirect effect was significant (self-instrumentality: $\beta = –.52$, SE = .07, 95% CI [–0.673, –0.385]); self-

objectification words rating: β = –1.03, SE = .08, 95% CI [–1.199, –0.874]; see Figure 3), suggesting that self-objectification triggered by the performance goal orientation further predicted reduced authenticity.

Figure 3.

The effect of performance goal orientation on authenticity via self-objectification, Study 4.



Note. Standardized coefficients are reported. Total effect coefficient was shown in parentheses.

Study 5a

The aims of Study 5a and 5b are twofold. First, we included a condition of a mastery goal orientation (i.e., focusing on understanding the knowledge and the process of learning; Ames & Archer, 1988), the other dimension in the goal orientation theoretical framework (Dweck & Leggett, 1988), to rule out the possibility that the effect of a performance goal orientation on self-objectification is merely driven by goal pursuing. Second, to demonstrate that the effects (H1 and H2) are prevalent and are not specific to one culture, we recruited participants from both the UK (Study 5a) and China (Study 5b).

Method

Participants

We recruited 300 college students from the United Kingdom via Prolific. After excluding 23 participants who failed attention checks, the final sample included 277 participants (156 women, M_{age} = 28.64 years, *SD* = 9.52). They were randomly assigned to a

performance goal (N = 102), a mastery goal (N = 92), or a control (N = 83) condition.

Procedures and Measures

Participants were instructed that they just enrolled in a compulsory course. In the performance condition, participants were presented with the same eight comments as in Study 4, and they were told that these comments were written by previous students taking this course. In contrast, for those in the mastery goal condition, students read eight comments designed to promote a mastery goal orientation, which are also based on the eight dimensions of classroom climate (Ames & Archer, 1988). Example comments are, "In this course, we study hard because we are interested in the subject and wanted to gain new knowledge." and "In this course, we attach great importance to the endeavor and effort put into the process of learning." In the control condition, participants were only provided with some general information of the course (e.g., schedule and size of the class).

Next, participants were required to complete the same manipulation check question as in Study 4.

Finally, the participants completed the same measures of self-objectification (self-instrumentality, α = .80; self-objectification words rating, α = .93), authenticity (α = .94), and demographics as in Study 4.

Results and Discussion

Manipulation Check

Participants in the performance goal condition (M = 2.01, SD = 0.96) chose more performance goals (i.e., less mastery goals) than those in the control condition (M = 1.12, SD = 0.76, $t(183) = 6.88$, $p < .001$, Cohen's d = 1.02), and in the mastery goal condition (M = 0.53, SD = 0.62, $t(192) = 12.59$, $p < .001$, Cohen's d =1.81). The difference between the mastery goal and control conditions was also significant: $t(173) = 5.65$, $p < .001$, Cohen's d = 0.86. These results validated our manipulation method.

Main Effects

As predicted, the main effect of condition on self-objectification was significant: self-instrumentality, $F(2, 274) = 14.07$, $p < .001$, $\eta_p^2 = .09$; self-objectification words rating, $F(2, 274) = 60.56$, $p < .001$, $\eta_p^2 = .31$. In particular, self-objectification was higher in the performance goal condition (self-instrumentality: $M = 4.81$, $SD = 0.99$; self-objectification words rating: $M = 4.45$, $SD = 1.74$) than in the control (self-instrumentality: $M = 4.27$, $SD = 1.09$, $t(183) = 3.51$, $p < .001$, Cohen's $d = 0.52$; self-objectification word rating: $M = 2.33$, $SD = 1.30$, $t(183) = 9.20$, $p < .001$, Cohen's $d = 1.36$) and the mastery goal condition (self-instrumentality: $M = 4.03$, $SD = 1.05$, $t(192) = 5.27$, $p < .001$, Cohen's $d = 0.76$; self-objectification word rating: $M = 2.44$, $SD = 1.39$, $t(192) = 8.82$, $p < .001$, Cohen's $d = 1.27$). In contrast, the difference between the latter two conditions was not significant, self-instrumentality, $t(173) = 1.45$, $p = .150$; self-objectification word rating: $t(173) = 0.52$, $p = .601$. See supplementary materials for results on authenticity.

Authenticity as a Downstream Consequence

As in Study 4, we conducted the mediation analysis (PROCESS macro; model 4; 5000 resampled, Hayes, 2013), with the condition, the two measures of self-objectification (i.e., self-instrumentality and self-objectification word rating), and authenticity as the independent variable, mediators, and dependent variables, respectively. Specifically, for the condition, two dummy variables were coded: X1 (performance versus control: $X1_{performance} = 1$, $X1_{control} = 0$[3]) and X2 (performance versus mastery: $X2_{performance} = 1$, $X2_{mastery} = 0$[4]). The indirect effect was significant when either self-instrumentality, X1: $\beta = -.11$, SE = .04, 95% CI [–0.211, –0.037]; X2: $\beta = -.20$, SE = .05, 95% CI [–0.309, –0.103], or self-objectification words rating, X1: $\beta = -.50$, SE = .08, 95% CI [–0.676, –0.345], X2: $\beta = -.47$, SE = .07, 95% CI [–0.615, –

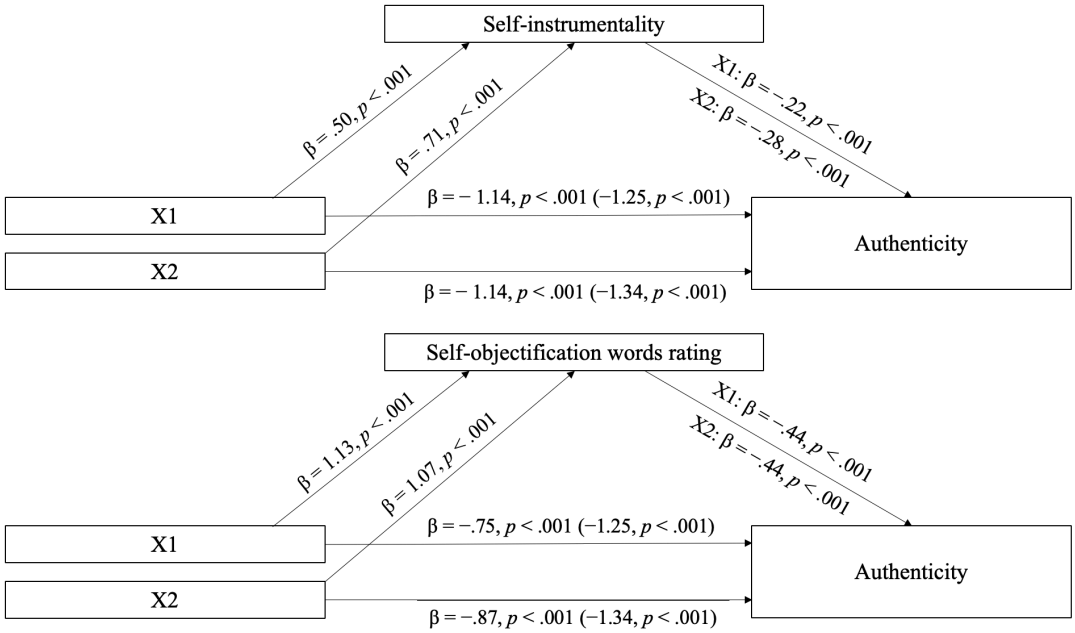
[3] participants in the mastery goal condition were excluded.

[4] participants in the control condition were excluded.

0.331], was entered as the mediator in the model, supporting that self-objectification could account for the effect of the condition on authenticity (see Figure 4).

Figure 4

The effect of the performance goal orientation on authenticity via self-objectification, Study 5a.



Note. Standardized coefficients are reported. Total effect coefficient was shown in parentheses.

Study 5b

Study 5b aimed to replicate the finding of Study 5a using a different sample (i.e. Chinese students).

Method

Participants

We recruited 320 Chinese undergraduate students from Credamo. Eleven participants failed an attention check, resulting in a final sample of 309 students (192 women; M_{age} = 21.95 years, *SD* = 3.27). Students were randomly assigned to performance, mastery, or control conditions, resulting in 103 participants in each condition.

Procedures and Measures

The procedure and measures ($\alpha_{self\text{-}instrumentality}$ = .88, $\alpha_{self\text{-}objectification}$ = 96, $\alpha_{authenticity}$ = .92)

were identical to that of Study 5a, except one difference. We did not include the manipulation check item in the main study and instead used a pilot study to validate this manipulation method (see supplementary materials).

Results and Discussion

Main Effects

Replicating the previous results, the multivariate analysis showed that the main effect of goal manipulation was significant on self-objectification: self-instrumentality, $F(2, 306) = 40.42$, $p < .001$, $\eta_p^2 = .21$; self-objectification words rating, $F(2, 306) = 67.99$, $p < .001$, $\eta_p^2 = .31$. In particular, self-objectification was higher in the performance goal condition (self-instrumentality: $M = 4.99$, $SD = 1.10$; self-objectification words rating: $M = 3.97$, $SD = 1.93$) than in the control (self-instrumentality: $M = 4.16$, $SD = 1.06$, $t(204) = 5.52$, $p < .001$, Cohen's $d = 0.77$; self-objectification words rating: $M = 2.24$, $SD = 1.18$, $t(204) = 7.72$, $p < .001$, Cohen's $d = 1.08$) and mastery conditions (self-instrumentality: $M = 3.61$, $SD = 1.16$, $t(204) = 8.74$, $p < .001$, Cohen's $d = 1.22$; self-objectification words rating: $M = 1.81$, $SD = .89$, $t(204) = 10.30$, $p < .001$, Cohen's $d = 1.44$). The difference between the latter two conditions was significant for self-instrumentality: $t(204) = 3.53$, $p < .001$, Cohen's $d = 0.49$, but not significant for self-objectification words rating ($p = .083$). See supplementary materials for results on authenticity.

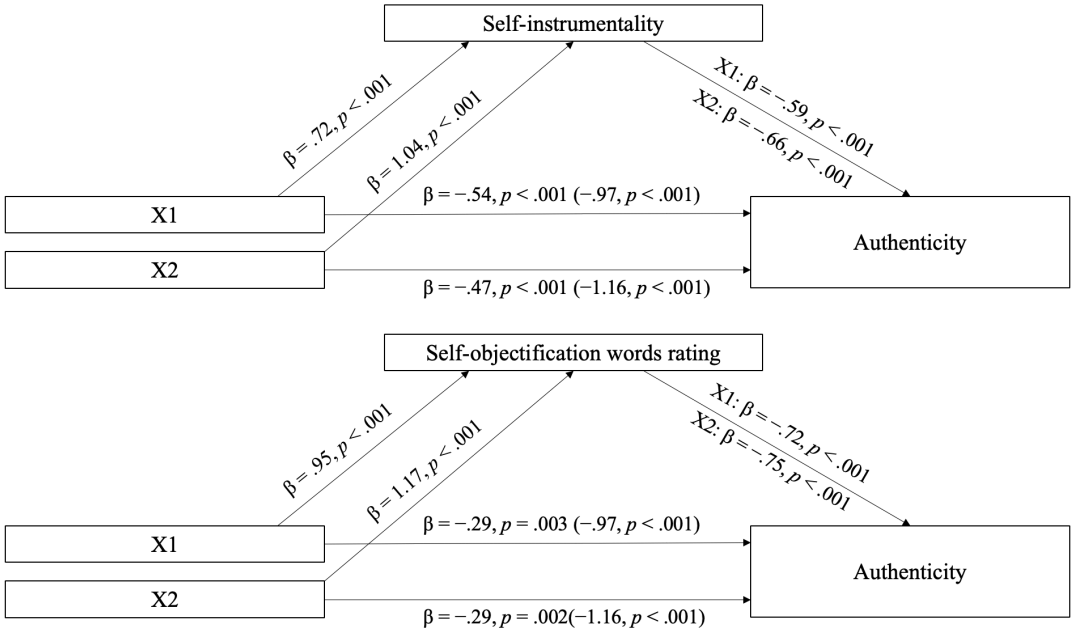
Authenticity as a Downstream Consequence

We coded dummy variables and conducted the mediation analysis using the same procedures as in Study 5a. Consistent with the findings of Studies 4 and 5a, the result showed that the indirect effect was significant when either self-instrumentality, X1: $\beta = -.42$, SE = .08, 95% CI [−0.574, −0.274], X2: $\beta = -.69$, SE = .08, 95% CI [−0.839, −0.535], or self-objectification word rating, X1: $\beta = -.68$, SE = .09, 95% CI [−0.855, −0.508], X2: $\beta = -.87$, SE = .08, 95% CI [−1.038, −0.713] acted as the mediator (see Figure 5). Thus, self-

objectification could account for the effect of the condition on authenticity.

Figure 5

The effect of the performance goal orientation on authenticity via self-objectification, Study 5b.



Note. Standardized coefficients are reported. Total effects coefficient was shown in parentheses.

General Discussion

Objectification in the realms of sexuality and work has attracted considerable research attention (Fredrickson & Roberts, 1997; Baldissarri et al., 2017). The present research integrated objectification theory (Nussbaum, 1995) with the educational realm and shed light on the potential antecedent and downstream effect of students' self-objectification. Specifically, we hypothesized that a performance goal orientation predicts and results in increased self-objectification among students, further predicting reduced authenticity.

Results across six studies (N = 1,716) are consistent with our predictions. Studies 1-2, employing cross-sectional and 2-wave designs, examined the positive association between the performance goal orientation and self-instrumentality (one crucial dimension of self-objectification) among college students. Study 3 enhanced the generalizability and robustness

of our findings by testing the proposed link among middle school students. Studies 4-5b employed experimental methodologies to test the causal relationship between the performance goal orientation and self-objectification. Notably, a mastery goal orientation did not impact self-objectification (Studies 5a and 5b), suggesting that self-objectification is specifically triggered by an emphasis on performance goals rather than all types of goal pursuit. Of equal importance, increased self-objectification triggered by the performance goal orientation was further related to reduced authenticity (Studies 3-5b). These findings consistently indicated that both trait and state performance goal orientations could elevate self-objectification, which was observed across educational contexts and among individuals of varying ages (i.e., young adults and adolescents) and cultural backgrounds (e.g., the UK and China).

Theoretical contributions

This study contributes to the literature on self-objectification by examining its occurrence and determinants in educational contexts for the first time. Psychological research on the phenomenon of objectification initially emerged in the domain of gender studies before being extended to the realm of work. To date, numerous studies have investigated the precursors and consequences of both sexual and workplace objectification (for reviews, Baldissarri et al., 2022b; Moradi & Huang, 2008). The present study extends this understanding by demonstrating that self-objectification is not confined to these domains but also manifests in educational settings. Importantly, a performance goal orientation emerges as a significant trigger for self-objectification, aligning with several prior findings. First, existing objectification research has shown that acceptance of sociocultural ideals of beauty can lead to women's self-objectification (Dakanalis et al., 2014) and prioritizing monetary can lead individuals to perceive themselves as mere instruments and machines (Ruttan & Lucas, 2018). In fact, these findings suggest that externally prescribed goals play a critical role in

heightening self-objectification. Specifically, such goals lead individuals to prioritize their instrumental value over their intrinsic humanity. Our research further suggests that pursuing performance-oriented goals, despite the inherent aim of education, such as fostering students' intrinsic development, personal growth, and self-actualization (Matusov & Marjanovic-Shane, 2019), could trigger self-objectification among students. In addition, prior studies have found that self-objectification could be triggered by competitiveness and immorality, although not in an educational setting (Kouchaki et al., 2018; Wang et al., 2021a; 2022b). Interestingly, a performance goal orientation is often grounded in an educational context characterized by competitiveness (Butera et al., 2024), which is further linked with other detrimental consequences, such as rote learning strategies (Vermetten et al., 2001) and cheating behavior (Pulfrey & Butera, 2013).

Our findings highlight the importance of taking the students' self-perspective to understand the downsides of goal pursuit. Moreover, whereas previous studies demonstrated the proximal and distal consequences of a performance goal orientation, including increased threat appraisals, reduced flow experience, and maladaptive peer relationships (see the meta-analysis by Payne et al., 2007), little has been done to address its effects on the self. Based on existing research suggesting the impact of goal-related self-concept on individuals' emotional well-being (Brunstein et al., 1998) and behaviors (Welsh et al., 2020), the current study showed how a specific goal orientation (i.e., performance but not mastery) undermines students' authenticity via self-objectification. Previous studies have found that self-objectification increases burnout and decreases belief in personal free will and well-being (Auzoult & Personnaz, 2016; Baldissarri et al., 2017; Baldissarri et al., 2022a). These findings suggest that self-objectification in educational contexts may cause similar negative consequences for students.

Furthermore, our findings also extend the literature by showing that students' self-

objectification further predicts their decreased authenticity. In the short term, self-objectification may offer some benefits to students. For instance, viewing oneself as a tool enables students to mechanically follow the instructor's learning agenda that facilitate high achievement (Senko et al., 2013). In this way, self-objectified students would not neglect any materials valued by the instructor, even though they might not feel personally interested (Senko & Miles, 2008). Additionally, in the pursuit of external goals, individuals often experience negative emotions such as anxiety and worry. By perceiving themselves as emotionless objects, students can partially avoid these negative feelings. However, the current study found that since self-objectifying individuals tend to focus on external goals rather than pursuing self-actualization, they experience a lower level of authenticity. Past research has highlighted the positive effects of authenticity, such as mindfulness (Lakey et al.,2008), improved job performance (Kim et al., 2023), reduced level of burnout (Grandey et al., 2012), as well as active engagement in life and career (Sutton, 2020). However, few studies have empirically examined the motivational factors that hinder students from pursuing their true selves in the learning process. In a critical stage of development, authentic living is very important for students to make learning meaningful (Manninen, 2016) and increase their absorbed mental states while learning (Van Den Bosch & Taris, 2014). In the educational system, it is also critical to improve students' authentic living and prevent their alienated feelings for their self-actualization and growth, which characterize the purpose of education (Shutenko, 2015).

Practical Implications

The current research provides several important educational implications. Substantively, our findings shed light on the reason why students tend to accept an object-like self-perception when faced with certain assessments and requirements. To prevent this form of self-perception among students, educators may avoid building a performance-oriented goal

structure through their instruction. Particularly, as suggested by the contextual features of performance goal orientation (Kaplan & Maehr, 2007), the learning tasks should not merely focus on interpersonal comparison, and the recognition should not be made publicly via normative standards. In other words, assignments and evaluations toward students should be designed as means, but not the ends of learning and education.

Limitations and Directions for Future Research

Although the present paper extends our understanding of self-objectification in important ways, there are some limitations. First, we did not distinguish between performance-approach and performance-avoidance goals in the dichotomy model (Elliot & Harackiewicz, 1996), as we found the correlations between the two subscales and self-instrumentality were in the same direction in Study 1. It can also be supported theoretically as both types of performance goals are possibly other-directed and correlated with increased use of surface-level learning strategies (e.g., rote learning; Nolen, 1988). Nevertheless, given that prior research found divergent effects of performance-approach and performance-avoidance goals on engagement (see Midgley et al., 2001 for a review), future research could systematically examine whether nuanced differences exist in the underlying mechanism for the effect of two types of performance goals on self-objectification. Second, in Study 2, although we controlled for participants' positive and negative emotions using a general measure, it would be more rigorous for future studies to assess and control discrete emotions linked with achievement goals, such as hopelessness and shame (Pekrun et al., 2006). Furthermore, in Study 3, although we constructed the original checklist based on the definition and instances of performance goals, evidence is still needed to empirically support the validity of this new measure.

In addition, as a secondary aim, we found that self-objectified students consequently report diminished authenticity. Although cross-sectional mediation analyses can reveal

meaningful theoretical models (e.g., Shrout, 2011; Winer et al., 2016), the model identified in the current research cannot establish causal relationships between self-objectification and authenticity, and thus, the results should be interpreted with caution. Future studies could adopt a causal-chain paradigm (i.e., manipulating self-objectification) to deal with this issue (Spencer et al., 2005).

Finally, we found that the effect of performance goals on self-objectification and authenticity was consistent across Eastern and Western cultures (Studies 5a and 5b). Interestingly, in collectivist cultures, the significance of a performance goal encompasses worries about how one's performance is relative to others, which not only shapes self-perception but also further impacts their social group (Urdan & Kaplan, 2020; Urdan & Mestas, 2006). Therefore, it is possible that knowing one's in-group member is facing a performance goal, individuals could also objectify this in-group member by perceiving the target as a tool for achievement while denying their humanness. Future research could continue to test this possibility.

Conclusion

In the present research, we identified students' self-objectification and examined its antecedent – a performance goal orientation. Results across six studies (N = 1,716) showed that self-objectification is correlated with and can be triggered by performance goals, whereas mastery goals showed no effect on self-objectification. In addition, students' self-objectification is further linked to diminished authenticity. These findings remained consistent across students at different developmental stages and from different cultures.

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