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Social Media Usage Types and Adolescent Academic Performance: Unraveling the Mediating Roles of Materialism and School Burnout

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Abstract

Adolescents are increasingly exposed to materialistic values propagated on social media, and studies have identified a negative association between materialism and learning. However, limited research has examined how different types of social media use contribute to materialism and, in turn, affect learning outcomes. Based on the stimulus-organism-response (S-O-R) framework, this study explored the relationships among different types of social media use (i.e., social, hedonic, and cognitive), materialism, school burnout, and academic performance. Survey data from 853 high school students were analyzed using structural equation modeling (SEM). The results revealed that social and hedonic use were positively associated with materialism, whereas cognitive use was negatively associated with materialism. Additionally, materialism impaired academic performance through increased school burnout. These findings highlight the differential effects of social media use on materialism and learning outcomes, suggesting that promoting cognitive social media use may help mitigate materialism and school burnout, ultimately enhancing academic performance.

Keywords: social media, materialism, school burnout, academic performance, adolescent

1. Introduction

The rise of consumerist culture has significantly promoted the pursuit of affluence, luxury lifestyles, and branded products. Adolescents growing up in this culture are increasingly materialistic (Twenge & Kasser, 2013). This materialistic orientation is reflected in prioritizing acquiring material goods as a means to achieve life goals (Richins, 2017). However, endorsing materialism can be detrimental to physical and psychological well-being. Specifically, adolescents who embrace materialistic orientations tend to experience greater envy and anxiety (Froh et al., 2011; Kasser, 2005), exhibit lower pro-social and pro-environmental attitudes and behaviors (Lv et al., 2023; Hurst et al., 2013), and engage in risk behaviors (Livazovic, 2017).

In addition to these negative consequences, it is surprising that materialism may also negatively affect student learning. Highly materialistic students like school less and report somewhat poorer grades (Goldberg et al., 2003). In line with this, longitudinal and experimental studies have further indicated that materialism negatively affects students' intrinsic goals and contributes to maladaptive learning outcomes (Ku et al., 2012, 2014). Specifically, students with higher levels of materialism are less likely to engage in learning activities and tend to perform worse on exams over time (King, 2020; Ku et al., 2022).

In contemporary society, social media has become a major platform for exchanging information, connecting with others, and engaging in leisure activities. Meanwhile, various materialistic symbols (e.g., luxury goods, fashion portraits, photos of exclusive experiences) are embedded in social media content, reinforcing materialistic values (Moldes & Ku, 2020). For adolescents, who are at the stage of developing their values, frequent exposure to such materialistic content can foster the endorsement of materialism (Goldberg et al., 2003; Chia, 2010). However, previous studies have primarily focused on the association between materialism and general social media use without distinguishing between its specific types (Cleveland et al., 2023; Wang et al., 2020). Indeed, social media use can be classified into various types, such as social use, hedonic use, and cognitive use (Ali-Hassan et al., 2015), each of which may have different associations with materialism.

Although a majority of studies have explored the association between social media use and learning outcomes (Sampasa-Kanyinga et al., 2019; Astatke et al., 2021), limited research has examined this association from the perspective that social media use cultivates materialism. Therefore, based on the stimulus-organism-response (S-O-R) framework (Mehrabian & Russell, 1974), this study aims to investigate the effects of different types of social media use on learning outcomes including school burnout and academic performance through materialism.

2. Theoretical Background and Hypotheses

2.1 The S-O-R Framework

The stimulus-organism-response (S-O-R) framework postulates that environmental stimuli influence individuals' affective and cognitive processes, which subsequently lead to certain behavioral responses (Mehrabian & Russell, 1974). This theoretical framework has been widely accepted and applied in various domains such as consumer behavior (Ming et al., 2021) and online learning (Zhai et al., 2023).

Within this framework, stimulus refers to external factors affecting psychological states, organism denotes internal states mediating the relationship between stimulus and responses, and response indicates behavioral outcomes. In this study, stimulus represents distinct types of social media use (i.e., social, hedonic, and cognitive), organism reflects adolescents' materialistic values, and response encompasses school burnout and academic performance. According to the S-O-R framework, the three types of social media use may differently cultivate adolescents' materialism, thereby influencing school burnout and academic performance. The research model of this study is illustrated in Figure 1.

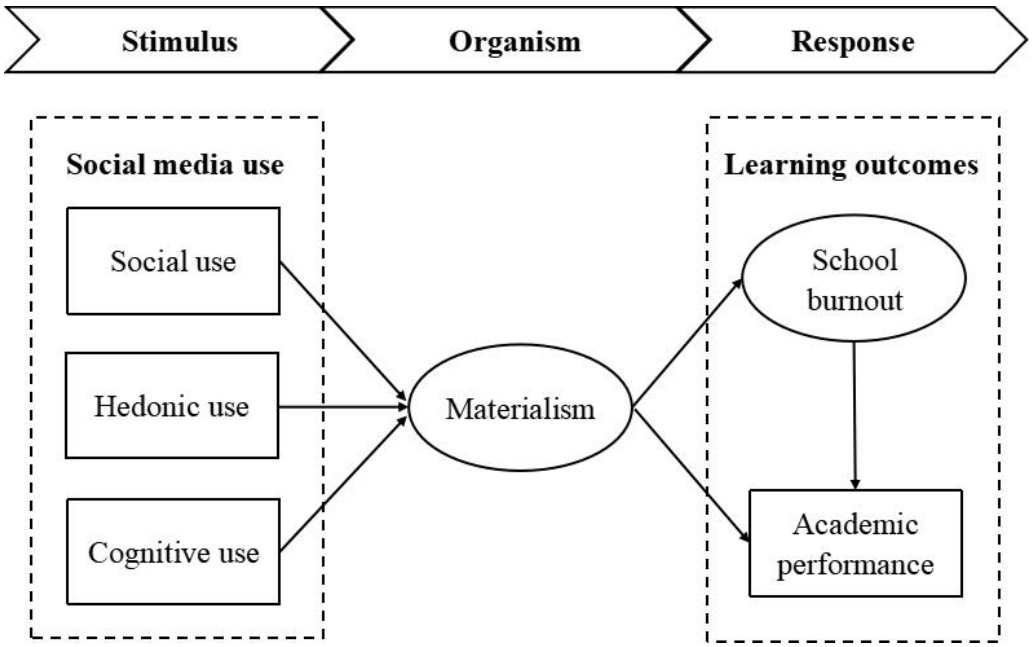

Figure 1. Research Model

2.2 Materialism

Materialism is conceptualized as a value orientation that emphasizes the importance of acquiring material possessions to achieve desired end states (Fournier & Richins, 1991). Building on this definition, Richins and Dawson (1992) further refined the materialism construct by delineating it into three facets: (1) possession-defined success, which indicates that the acquisition of material possessions serves as a primary indicator of success; (2) acquisition centrality, which refers to the extent to which the acquisition of possessions is central to one's life; and (3) the pursuit of happiness through acquisition, which reflects the belief that acquiring more possessions leads to greater happiness.

Adolescence represents a pivotal period of development, during which values are highly susceptible to social models such as family, peers, and media (Zawadzka et al., 2021). As consumption culture gains prominence worldwide, adolescents are becoming increasingly materialistic. Existing research has revealed both a negative and a U-shaped relationship between age and materialism, suggesting that materialism is more prevalent during childhood and adolescence (Antinienė et al., 2021; Jaspers & Pieters, 2016).

Notably, placing a strong priority on material wealth is related to various problems. For example, materialism is negatively associated with well-being indicators such as life satisfaction, positive emotions, and meaning in life, and positively associated with psychological problems like depression and loneliness (Wang et al., 2017; Kashdan & Breen, 2007; Pieters, 2013). In addition, the pursuit of material goods is a key predictor of adolescents' maladaptive behaviors, including compulsive buying and delinquent behavior (Islam et al., 2018; Shek et al., 2022).

2.3 Materialism and Learning Outcomes

Although early studies have not measured materialism per se, they have provided evidence that excessive emphasis on material pursuits and other external goals is negatively associated with student learning (Nicholls et al., 1985; Vansteenkiste et al., 2004), which forms the basis for the present research. Froh et al. (2011) examined the roles of materialism in predicting academic achievement among high school students and found that materialism predicted lower reported GPA. Furthermore, Ku et al. (2012, 2014) conducted a series of cross-sectional, longitudinal, and experimental studies among children and adolescents in the UK and Hong Kong, and found that materialism predicted lower mastery goals and higher performance goals, which, in turn, negatively affected academic performance. Therefore, the following assumption was developed:

H1. Materialism is negatively associated with

academic performance.

In fact, the relationship between materialism and academic performance may be mediated by school burnout, a maladaptive learning outcome that has become increasingly prevalent worldwide. Zhang et al. (2013) and Salmela-Aro et al. (2016) found that nearly half of adolescents in their samples experienced school burnout. The concept of burnout was originally introduced to describe a work-related syndrome in the human services profession, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach & Schaufeli, 1993; Maslach & Jackson, 1981). Since students' learning activities can be viewed as a form of "work", the concept of burnout has been extended to the school setting, where it manifests as learning-related emotional exhaustion, cynicism (i.e., indifferent or distant attitudes) toward learning, and feelings of academic inadequacy experienced by students (Salmela-Aro et al., 2009). Accordingly, the symptoms of school burnout are associated with a range of negative outcomes. For instance, adolescents with higher levels of school burnout are more likely to drop out of school, experience anxiety, and have poorer family relationships (Bask & Salmela-Aro, 2013; Slivar, 2001).

Additionally, school burnout is a risk factor for students' academic performance. Students with higher levels of school burnout often lack the motivation and energy to engage in academic tasks, which may impair their academic performance (Thorndike, 1914; Vansoeterstede et al., 2023). The negative relationship between school burnout and academic performance is supported by both cross-sectional and longitudinal studies (Madigan & Curran, 2021; Pham Thi & Duong, 2024). Based on the aforementioned evidence, the following hypothesis was formulated:

H2. School burnout is negatively related to academic performance.

One potential antecedent of school burnout is the values and goals of individuals. Empirical evidence from workplace studies has demonstrated that materialism is a significant predictor of burnout (Unanue et al., 2017; Reyes et al., 2024). However, research linking materialistic values to school burnout remains scarce. According to Self-determination theory (SDT), individuals have three basic psychological needs (i.e., autonomy, competence, and relatedness) that must be satisfied to achieve optimal functioning (Ryan & Deci, 2000). Materialists, who prioritize extrinsic goals such as wealth and fame, often experience heightened need frustration (Reyes et al., 2022), which can increase the likelihood of school burnout (Goegan & Daniels, 2022). In addition, a longitudinal study by King and Datu (2017) suggested that materialism positively predicted amotivation (i.e., a lack of motivation) towards learning. Adolescents who lack academic motivation often perceive learning as meaningless and experience higher levels of stress, which can further exacerbate school burnout (Güngör & Sari, 2022; Henderson-King & Mitchell, 2011). Thus, the following hypothesis was proposed:

H3. Materialism is positively associated with school burnout.

H4. School burnout plays a significant mediating role in the relationship between materialism and academic performance.

2.4 Social Media Use and Materialism

2.4.1 Association Between Social Media Use and Materialism

Adolescents frequently exposed to materialistic content on social media are more likely to adopt materialistic values (Wang et al., 2020; Rasmussen et al., 2022). According to cultivation theory, frequent and prolonged exposure to consistent and pervasive media content (e.g., television programs) shapes audiences' attitudes, beliefs, and values over time (Gerbner, 1998). This effect has been confirmed in the context of social media (Hermann et al., 2023). Longitudinal and experimental research provides evidence that exposure to ubiquitous materialistic cues on social media strengthens both dispositional and situational materialism (Opree et al., 2014; Moldes & Ku, 2020).

Adolescents spend more time on social media platforms than other age groups (We Are Social & Meltwater, 2024). These platforms enable users to create and exchange diverse content (Kaplan & Haenlein, 2010), much of which includes materialistic cues. Adolescents are particularly likely to use social media for brand research (We Are Social & Meltwater, 2024), which increases their exposure to materialistic content. Additionally, they are exposed to more advertisements on social media, where customized advertisements are seamlessly embedded into influencers' posts, making them

both appealing and difficult to ignore (Zhou et al., 2021). These advertisements often promote the idea that material possessions lead to happiness, thereby reinforcing materialistic values (Nairn & Opree, 2021).

2.4.2 Types of Social Media Use

A majority of studies examining the relationship between social media use and materialism treat social media use generically, overlooking the fact that different types of social media use may be linked to materialism in distinct ways. According to Uses and Gratifications (U&G) Theory, individuals actively select media to satisfy specific needs (Katz et al., 1973), which may lead to exposure to diverse types of content when using social media. Specifically, U&G research has identified three categories of needs (i.e., social, hedonic, and cognitive) that can be satisfied by social media use (Raacke & Bonds-Raacke, 2008; Gan & Li, 2018; Meishar-Tal & Pieterse, 2017). In this study, we categorize social media use into three dimensions corresponding to these needs: social, hedonic, and cognitive uses (Ali-Hassan et al., 2015; Sun & Chao, 2024).

Social use refers to using social media to develop and sustain social relationships (Raacke & Bonds-Raacke, 2008). Previous research has shown a significant positive relationship between communication with friends and materialism (Santini et al., 2018). Social media platforms enable adolescents to engage with peers by exchanging consumption-related information, which encourages social comparison and increases exposure to materialistic cues, thereby reinforcing materialistic values (Chan & Prendergast, 2007; Duh, 2015; Wang et al., 2020). Additionally, Zhu et al. (2021) demonstrated that increased social use of internet predicts higher levels of materialism. Therefore, the following assumption was proposed:

H5. Social use is positively related to materialism.

Hedonic use is defined as the use of social media for relaxing and entertainment (Ali-Hassan et al., 2015). Adolescents often engage in social media for leisure (Buda et al., 2020), where they encounter a wide variety of content, including materialistic cues such as advertisements and extravagant experiences (Rasmussen et al., 2022). According to cultivation theory, repeated exposure to materialistic content may lead adolescents to endorse materialistic values (Chia, 2010; Santini et al., 2018). For this reason, the following hypothesis was constructed:

H6. Hedonic use is positively correlated with materialism.

Cognitive use refers to using social media for academic purposes, including accessing, creating, and sharing learning content (Sun & Chao, 2024). In addition to materialistic content, social media also provides access to extensive educational content (Ali et al., 2017). Since adolescents using social media for learning are less likely to engage in materialistic content, they may exhibit lower levels of materialism. Furthermore, cognitive use of social media, such as information-seeking and collaboration, promotes critical thinking (Thaiposri & Wannapiroon, 2015), which can challenge normative beliefs (Elmore et al., 2017), including social norms that emphasize material possessions. Thus, the following hypothesis was proposed:

H7. Cognitive use is negatively associated with materialism.

2.5 The Present Study

To our knowledge, limited research has examined the role of materialism in mediating the relationship between social media use and learning outcomes, and few studies have differentiated between various types of social media use in examining its link to materialism. To address these gaps, this study, based on the S-O-R framework, investigates how different types of social media use (i.e., social, hedonic, and cognitive) influence adolescents' materialism, which, in turn, affects their learning outcomes, including school burnout and academic performance. Additionally, as the mechanism underlying the association between materialism and academic performance remains unexplored, we examine whether school burnout mediates this relationship. In sum, we hypothesize that the three types of social media use foster varying levels of materialism, leading to school burnout and, consequently, affecting academic performance.

3. Method

3.1 Participants and Procedures

Data were collected between October and November 2024. Students from two high schools in Tianjin, China, were invited to participate in the survey and were informed that participation was voluntary and anonymous. A total of 1,039 participants completed the paper-and-pencil questionnaires during class time under the

supervision of psychology graduate students and school teachers. Participants who failed the attention check or chose identical answers for almost every item were excluded from the analysis, leaving a final sample of 853 valid responses (M_{age} = 15.72, SD_{age} = .824; 444 females). The Ethics Committee of Tianjin Normal University granted approval for the study.

3.2 Measures

3.2.1 Types of Social Media Use

All items used to measure different types of social media use from Sun and Chao (2024) were adopted in this study. Participants were asked to rate how much they agreed or disagreed with statements relevant to social media use in daily life, on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). Specifically, social use consists of four items (e.g., "get acquainted with classmates who share my interests"); hedonic use includes three items (e.g., "entertain myself"); and cognitive use comprises four items (e.g., "create content for study").

3.2.2 Materialism

Materialism was assessed using the 9-item Material Values Scale (MVS; Richins, 2004), with item wording adapted from the Chinese version revised by Li and Guo (2009). The scale comprises three dimensions: success (e.g., "The things I own say a lot about how well I'm doing in life"), centrality (e.g., "I like a lot of luxury in my life"), and happiness (e.g., "My life would be better if I owned certain things I don't have"). Each item was scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The reliability and validity of the 9-item scale have been established in the Chinese context (Zhu et al., 2021).

3.2.3 School Burnout

The 9-item School Burnout Inventory (SBI; Salmela-Aro et al., 2009) was used to measure students' school burnout. The SBI consists of three dimensions: four items assessing exhaustion at schoolwork (e.g., "I feel overwhelmed by my schoolwork"); three items measuring cynicism toward the meaning of school (e.g., "I feel that I am losing interest in my schoolwork"); and two items evaluating sense of inadequacy at school (e.g., "I often have feelings of inadequacy in my schoolwork"). All items were rated on a 6-point Likert scale ranging from 1 (completely disagree) to 6 (completely agree). This inventory has demonstrated good reliability and validity among Chinese adolescents (Liou et al., 2022).

3.2.4 Academic Performance

To measure academic performance, self-reported grades were used. Participants were asked to rate their grade ranking on a five-point scale, ranging from 1 = "very low" to 5 = "very high" (Chao et al., 2023). In this study, the rank score was treated as a continuous variable, with higher scores indicating better academic performance (M = 3.187, SD = .799, Skewness = -.097, Kurtosis = .693).

3.2.5 Demographics

Participants were instructed to provide their gender and age at the beginning of the questionnaire.

3.3 Data Analysis

Missing data were observed in several variables because of the limitations of the paper-and-pencil survey. The Missing Completely at Random (MCAR) test was conducted to assess the missingness mechanism, and the results indicated that the data were missing at random (p = .13). Therefore, we applied multiple imputation using the *missForest* package in R (Stekhoven & Bühlmann, 2012) to impute missing values. MissForest is a non-parametric method based on random forest algorithms that enhances imputation accuracy while preserving data integrity, improving the quality of subsequent analyses.

Descriptive and correlation analyses were first conducted using SPSS 26.0. For the main analyses, a structural equation model (SEM) was performed using the *lavaan* package (Rosseel, 2012) in R (version 4.4.1) to test the hypotheses. Model parameters were estimated employing maximum likelihood estimation with robust standard errors (MLR). Additionally, gender and age were included as control variables.

4. Results

4.1 Measurement Model

We assessed the measurement model by examining internal consistency reliability, convergent validity, and discriminant validity (Hair et al., 2017). Internal consistency reliability was evaluated using Cronbach's α, McDonald's ω, and composite reliability (CR), with values exceeding .70 considered acceptable. Convergent validity was assessed through average variance extracted (AVE), with values greater than .50

indicating adequate validity (Fornell & Larcker, 1981).

As shown in Table 1, Cronbach's α, McDonald's ω, and *CR* of each construct exceeded .70, while all *AVE* values surpassed the .50 threshold, indicating sufficient reliability and convergent validity of the instrument.

Discriminant validity was evaluated using the Heterotrait-monotrait (*HTMT*) ratio. As presented in Table 2, the *HTMT* ratios for all constructs were below the recommended threshold of .85 (Henseler et al., 2015), suggesting that the constructs demonstrate acceptable discriminant validity.

Table 1. Descriptive statistics and measurement model results

Construct	Mean (*SD*)	α	ω	*CR*	*AVE*	1	2	3	4	5
1. Social use	3.201 (.881)	.767	.771	-	-	-				
2. Hedonic use	3.940 (.844)	.709	.715	-	-	.262**	-			
3. Cognitive use	3.195 (1.009)	.902	.907	-	-	.420**	.241**	-		
4. Materialism	3.020 (.788)	.859	.875	.851	.657	.178**	.137**	-.076*	-	
5. School burnout	2.946 (1.042)	.873	.878	.857	.667	-.002	.125**	-.105**	.364**	-
6. Academic performance	3.187 (.799)	-	-	-	-	.023	.039	.132**	-.030	-.167**

Note. *SD* = standard deviation; α = Cronbach's α; ω = McDonald's ω; *AVE* = average variance extracted; *CR* = composite reliability; - indicates not applicable; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

Table 2. Results of HTMT discriminant validity

Construct	Social use	Hedonic use	Cognitive use	Materialism	SB
Social use	-				
Hedonic use	.262	-			
Cognitive use	.420	.241	-		
Materialism	.195	.148	.076	-	
SB	.034	.135	.114	.420	-
AP	.023	.039	.132	.035	.178

Note. SB = school burnout; AP = academic performance.

4.2 Structural Model

The research model (Figure 2) demonstrated an acceptable fit to the data (χ^2 [48] = 243.688, $p < .001$; CFI = .919; TLI = .890; RMSEA = .071, 90% C.I. [.062, .079]; SRMR = .056).

Table 3 presents the path coefficients and specific indirect effects in the research model. Specifically, social and hedonic uses were significantly positively associated with materialism, supporting H5 and H6 (H5: β = .239, $p < .001$; H6: β = .155, $p < 0.001$). Cognitive use exhibited a significantly negative association with materialism, supporting H7 (β = -.242, $p < .001$). Additionally, materialism had a positive effect on school burnout, but no effect on academic performance, thereby supporting H3 (β = .427, $p < .001$) and rejecting H1. Furthermore, school burnout was negatively related to academic performance (β = -.215, $p < .001$), thus supporting H2.

The test of indirect effects suggested that school burnout mediated the relationship between materialism and academic performance (β = -.092, p < .001), supporting H4. Moreover, the paths from social, hedonic, and cognitive uses to academic performance were significant (p < .01), and these effects were mediated by materialism and school burnout.

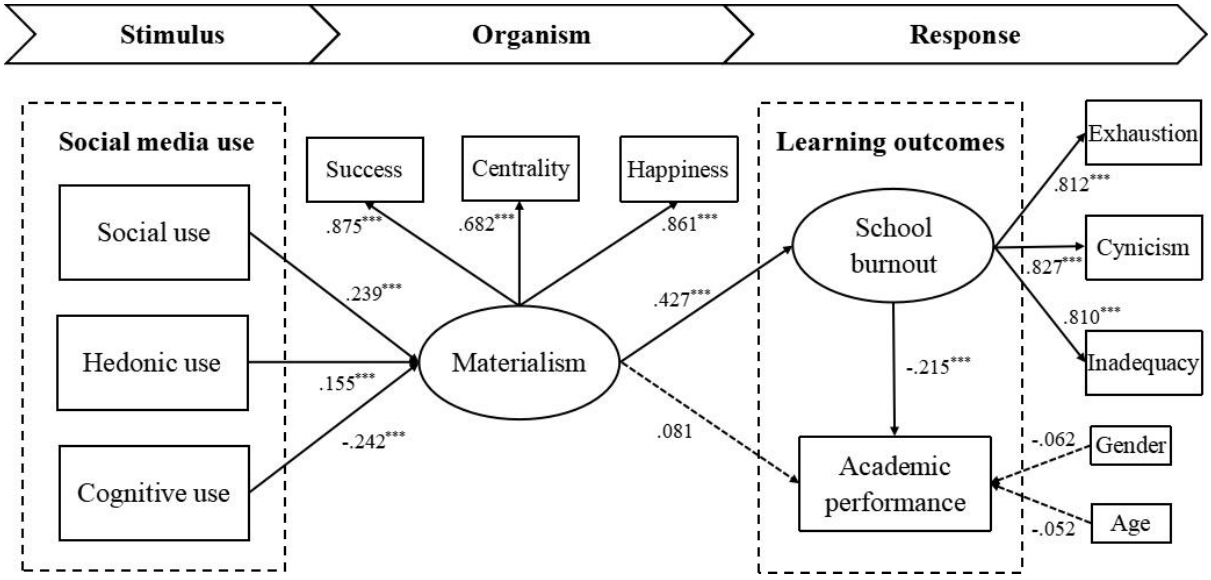

Figure 2. Results of the SEM analysis

Table 3. Results of direct and indirect effects testing

	β	*SE*	*z*	*p*	Results
Direct effect					
H1: Materialism → AP	.081	.014	1.820	.069	Rejected
H2: SB → AP	-.215	.012	-4.431	.000	Supported
H3: Materialism → SB	.427	.057	9.675	.000	Supported
H5: SU → Materialism	.239	.031	5.635	.000	Supported
H6: HU → Materialism	.155	.042	3.782	.000	Supported
H7: CU → Materialism	-.242	.029	-5.448	.000	Supported
Indirect effect					
H4: Materialism → SB → AP	-.092	.007	-4.044	.000	Supported
SU → Materialism → SB→AP	-.022	.001	-3.316	.001	-
HU → Materialism → SB→AP	-.014	.002	-2.638	.008	-
CU → Materialism → SB→AP	.022	.001	3.095	.002	-

Note. SU = social use; HU = hedonic use; CU = cognitive use; SB = school burnout; AP = academic performance.

5. Discussion

5.1 Main Findings

Drawing on the S-O-R framework, this study examined how different types of social media use and materialism influence adolescents' learning outcomes. Specifically, it investigated the effects of social, hedonic, and cognitive uses of social media on materialism, which subsequently influenced adolescents' school burnout and, in turn, their academic performance. The SEM analysis yielded several noteworthy findings.

As expected, social and hedonic uses positively impact materialism, whereas cognitive use has a negative effect. On the one hand, social use exerts a stronger influence on materialism than hedonic use. This can be explained by U&G Theory (Katz

et al., 1973), as adolescents who use social media for socialization typically have a strong need for belonging and peer acceptance. Social use involves peer interactions, where adolescents actively exchange consumption-related information and adopt materialistic attitudes from their peers (Zarouali et al., 2018; Duh, 2015). In this process, material possessions are seen as a means to achieve social status and acceptance, prompting adolescents to internalize materialistic values to fit in with their peers (Banerjee & Dittmar, 2008). In contrast, hedonic use primarily involves passive content consumption, which, although exposing adolescents to materialistic content, lacks the interactive reinforcement of peer influence. Consequently, the effect of hedonic use on materialism is weaker than that of social use.

On the other hand, adolescents who use social media for academic purposes are more likely to be exposed to knowledge-based content rather than materialistic information. Such content, including educational videos and academic resources, satisfies the needs for autonomy and competence, thereby fostering intrinsic motivation (Durksen et al., 2016; Ryan & Deci, 2000). According to Kasser and Ryan (1996), individuals with stronger intrinsic motivation rely less on external rewards, such as material wealth and social status, leading to lower materialistic tendencies. Thus, cognitive use of social media may serve as a protective factor against materialism by reducing exposure to materialistic content and fostering intrinsic motivation.

Contrary to earlier studies that reported a direct negative effect of materialism on academic performance (Froh et al., 2011; Ku et al., 2014), our findings revealed no significant direct association. This aligns with recent research suggesting that the effect of materialism on academic performance is fully mediated by internal psychological mechanisms (King & Datu, 2017). Our findings suggest that school burnout fully mediates the relationship between materialism and academic performance. One possible explanation is that highly materialistic students often experience lower school well-being and reduced self-efficacy (Jiang et al., 2015; Shafique et al., 2023), which limits their psychological resources for coping with academic challenges, ultimately leading to increased school burnout. Longitudinal studies have shown that adolescents with higher levels of burnout tend to exhibit poorer academic performance (Liou et al., 2022), likely due to impaired cognitive functioning caused by school burnout (May et al., 2015). Taken together, these findings indicate that materialism negatively affects academic performance through school burnout.

5.2 Theoretical Implications

This study offers several theoretical contributions. First, unlike existing research that focused on general social media use and materialism (Sampasa-Kanyinga et al., 2019), we differentiated social media use into three dimensions (i.e., social, hedonic, and cognitive) according to the U&G Theory (Katz et al., 1973). Building on the S-O-R framework (Mehrabian & Russell, 1974), we then explored how these distinct types of social media use affect learning outcomes (i.e., school burnout and academic performance) by shaping adolescents' materialistic values. This underscores the heterogeneity of stimuli (i.e., social media use) within the S-O-R framework, providing a more refined theoretical perspective.

Second, our study extends the S-O-R framework to the digital context, offering a nuanced understanding of how different digital behaviors relate to learning outcomes. Our findings highlight the sequential mediating role of materialism and school burnout in their relationship. Specifically, social and hedonic uses foster, while cognitive use mitigates materialism, which subsequently exacerbates school burnout and impairs academic performance. Chao et al. (2025) suggested that using social media for academic purposes positively influences perceived academic performance. Similarly, our findings indicate that cognitive use acts as a protective factor by mitigating materialism and alleviating school burnout, thereby promoting academic performance. Thus, these findings highlight the dual nature of social media.

5.3 Practical Implications

Given the dual impact of social media use, parents and teachers should play an active role in guiding adolescents toward responsible social media engagement. Specifically, social media use for educational purposes (e.g., participating in online academic groups, watching educational videos) should be encouraged, while social and hedonic uses (e.g., chatting with peers, sharing personal updates, consuming entertaining content such as live shopping streams) should be

monitored and regulated to support academic achievement.

Additionally, adolescents are susceptible to developing materialistic values due to exposure to conspicuous content on social media, ultimately leading to school burnout. Social media literacy has been proven to be a protective factor against the negative effects of media exposure (McLean et al., 2016), as it helps individuals critically assess and resist persuasive content. Accordingly, media literacy education should be implemented in schools, focusing on guiding students to identify materialistic content on social media, critically evaluate its influence, and develop resilience against its impact.

5.4 Limitations and Future Directions

As with any empirical research, this study has several limitations. First, it was conducted among high school students, which limits the generalization of the findings to students of other age groups. Future research should examine students from diverse age groups to validate our results. Second, due to the cross-sectional design, this study cannot determine causal relationships. Longitudinal and experimental studies are needed to elucidate the temporal dynamics and establish causal links among social media use, materialism, school burnout, and academic performance. Third, this study was conducted in China, a collectivist society where parents place great emphasis on their children's academic performance (Chen et al., 2021). Given potential cross-cultural differences in academic expectations, future research should examine the extent to which our findings generalize to other cultural contexts. In addition, this study relied on a single self-reported item to measure academic performance, which may be subject to social desirability bias. Future research should incorporate objective measures (e.g., actual grade ranking or teacher evaluations) to validate and strengthen the findings.

6. Conclusion

Applying the S-O-R framework, this study developed a conceptual model to examine the roles of different types of social media use (i.e., social, hedonic, and cognitive) and materialism in relation to adolescents' school burnout and academic performance. The findings revealed that different types of social media use had distinct effects on materialism. Specifically, positive associations were found between social and hedonic uses and materialism, whereas cognitive use was negatively associated with materialism. Furthermore, materialism negatively impacted academic performance through school burnout. These findings suggest that cognitive social media use may play a beneficial role in learning. Educators should promote social media literacy education to mitigate the influence of materialistic content on social media and encourage appropriate social media use to improve academic performance.

Ethical Statement

All procedures involving human participants were approved by Tianjin Normal University Research Ethics Committee (2022012601). The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

Acknowledgments

Not applicable.

Availability of Data and Material

The datasets generated and analyzed during the current study are available from the author on reasonable request.

Consent for Publication

Not applicable.

Competing Interests

The authors have no conflict of interest to declare.

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Appendix

Appendix A. Measurement Items

Measurements	Sources
Excessive social use (ESU)	(Sun & Chao, 2024)
In daily life, I spend a large amount of time using social media to…	
(ESU1) …create new relationships at school.	
(ESU2) …get to know people I would otherwise not meet at school.	
(ESU3) …maintain close social relationships with people at school.	
(ESU4) … get acquainted with classmates who share my interests.	
Excessive hedonic use (EHU)	(Sun & Chao, 2024)
In daily life, I spend a large amount of time using social media to…	
(EHU1) …enjoy my break.	
(EHU2) …take a break and relax from study.	
(EHU3) …entertain myself.	
Excessive cognitive use (ECU)	(Sun & Chao, 2024)
In daily life, I spend a large amount of time using social media to…	
(ECU1) …share content with classmates.	
(ECU2) …create content in collaboration with classmates.	
(ECU3) …create content for study.	
(ECU4) …access content created by my classmates.	
Material Values Scale (MVS)	(Richins, 2004)
(MVS1) I admire people who own expensive homes, cars, and clothes.	
(MVS2) I try to keep my life simple, as far as possessions are concerned.	
(MVS3) My life would be better if I owned certain things I don't have.	
(MVS4) The things I own say a lot about how well I'm doing in life.	
(MVS5) Buying things gives me a lot of pleasure.	
(MVS6) I'd be happier if I could afford to buy more things.	
(MVS7) I like to own things that impress people.	
(MVS8) I like a lot of luxury in my life.	
(MVS9) It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like.	
School burnout inventory (SBI)	(Salmela-Aro et al., 2009)
(SBI1) I feel overwhelmed by my schoolwork.	
(SBI2) I feel a lack of motivation in my schoolwork and often think of giving	

up.

(SBI3) I often have feelings of inadequacy in my schoolwork.

(SBI4) I often sleep badly because of matters related to my schoolwork.

(SBI5) I feel that I am losing interest in my schoolwork.

(SBI6) I'm continually wondering whether my schoolwork has any meaning.

(SBI7) I brood over matters related to my schoolwork a lot during my free time.

(SBI8) I used to have higher expectations of my schoolwork than I do now.

(SBI9) The pressure of my schoolwork causes me problems in my close relationships with others.

Academic performance (AP) (Chao et al., 2023)

(AP1) What is your ranking in school?