

Academic Dishonesty and Problematic Internet Use: Mediating Role of Cognitive Emotion Regulation in Students

Moslem Daneshpayeh¹, Narges Masoudi², Fatemeh Shahsavari³, Zohre Dortaj⁴, and Farahnaz Ghaemi⁵

1. Department of Educational Psychology, Faculty of Psychology, Allameh Tabataba'i University, Tehran, Iran. E-mail: m_daneshpayeh@atu.ac.ir
2. Department of Psychology, Faculty of Iranian-Islamic Lifestyle, Islamic Revolution Comprehensive University, Tehran, Iran. E-mail: Na.masoudi@gmail.com
3. MSc of Counseling and Guidance, Faculty of Psychology and Educational Sciences, Islamic Azad University, Ahvaz, Iran. E-mail: fateme.sh1988@gmail.com
4. Corresponding author, MD, Tehran, Iran. E-mail: zohrehdrj@gmail.com
5. Department of Microbiology, Kerman Branch, Islamic Azad University, Kerman, Iran. E-mail: fghaemi@iau.ac.ir

Article Info

Article type:

Research Article

Article history:

Received September 21, 2025

Received in revised form November 23, 2025

Accepted December 06, 2025

Published Online December 26, 2025

Keywords:

Academic Dishonesty, Problematic Internet use (PIU), Maladaptive Emotion Regulation Strategies, Adaptive Emotion Regulation Strategies

ABSTRACT

Objective: The main purpose of present study was to explain academic dishonesty among senior high school students in Eqlid based on problematic Internet use, with mediating role of adaptive and maladaptive cognitive emotion regulation strategies.

Method: This study employed a descriptive-correlational design. The sample consisted of 385 senior high school students from Eqlid. Participants were selected using an availability sampling method during the 2024–2025 academic year. Data collection instruments included the Academic Dishonesty Questionnaire (McCabe & Trevino, 1996), Problematic Internet Use Questionnaire (Kaplan, 2002; revised format, 2010), and the Cognitive Emotion Regulation Questionnaire (Garnefski & Kraaij, 2006). The collected data were analyzed using Structural Equation Modeling (SEM) along SPSS and Amos software packages.

Results: The results of the present study confirmed a direct and positive effect of problematic Internet use on academic dishonesty and maladaptive emotion regulation strategies ($p < .001$, $\beta = -.538$; $p < .001$, $\beta = -.308$). Another finding indicated a direct and negative relationship between problematic internet use and adaptive emotion regulation strategies ($p < .001$, $\beta = -.313$). Overall, the findings suggest that problematic internet use enhances academic dishonesty in adolescents both directly and indirectly by weakening emotion regulation adaptive strategies and strengthening maladaptive ones. These results emphasize the necessity of considering the role of emotion regulation strategies in future preventative programs.

Conclusions: With regard to the findings of this study, educational counselors and therapists should pay attention to the role of problematic Internet use, as well as maladaptive cognitive emotion regulation strategies, in their interventions aimed at reducing academic dishonesty among students and adolescents. Furthermore, the necessity of teaching adaptive emotion regulation strategies to students, holds significant importance in this context.

Cite this article: Daneshpayeh, M., Masoudi, N., Shahsavari, F., Dortaj, Z. & Ghaemi, F. (2025). Structural. *Iranian Journal of Learning and Memory*, 8 (32), 33-46. DOI: <https://doi.org/10.22034/iepa.2026.572415.1583>



© The Author(s).

Publisher: Iranian Educational Research Association.

DOI: <https://doi.org/10.22034/iepa.2026.572415.1583>

Introduction

Adolescence is recognized as a period marked by profound transitions in physical, cognitive, and psycho-social development, the consequences of which persist into and beyond adulthood (Cheng et al., 2024). During this stage, adolescents are particularly sensitive to social stimuli, and their need for peer interaction significantly increases (Orben et al., 2020). Meanwhile, although the expansion of digital technologies and easy access to the Internet have created unprecedented opportunities in areas such as individual communication, access to information, and cross-border social interactions (Rollo et al., 2023), the increasing integration of the Internet into the daily lives of adolescents has simultaneously raised serious concerns regarding its potential for negative consequences (Bour et al., 2021). Coinciding with the growing dependence of societies on information technology, the Internet has introduced both well-being and problems for communities, especially for adolescents (Liang et al., 2021). The positive aspect stems from the fact that, through information technology, adolescents can enrich their lives scientifically, gain rapid access to information, learn without restrictions, and develop their interests. Conversely, new technologies activate many risk domains, leading to harms, particularly for individuals with low levels of media literacy (Tomczyk et al., 2020).

Problematic Internet use is a multidimensional construct referring to a wide range of difficulties that internet engagement can cause in psychological, social, academic, or occupational domains (Kozybska et al., 2023). For adolescents, based on the lack of self-control and incomplete physical and psychological maturity, it is crucial to pay close attention to the potential harm associated with internet use (Xu & Tang, 2024). One of the consequences of inappropriate use of the Internet is an increase in cheating (Yazdi & Hatami, 2023) and academic dishonesty among adolescents (Krienert et al., 2022).

Academic dishonesty refers to any form of cheating or unethical behavior within the classroom context that violates the principles of fairness and honesty (Sevimel-Sahin, 2023). In the past, academic dishonesty primarily emphasized cheating and plagiarism, but today this concept encompasses all activities intended to influence educational outcomes through unfair means (McClung & Gaberson, 2021). Harper (2006), in a study entitled 'Advanced Cheating', examined the relationship between cheating and problematic Internet use, estimating this association to be direct and significant. Similarly, other researchers have identified a positive association between academic dishonesty and internet use, suggesting that extensive internet engagement exposes students to a wide range of cheating methods, thereby increasing the likelihood of dishonest behavior in academic settings (Désiron & Petko, 2023).

Apart from academic dishonesty, problematic Internet use has been associated with a range of adverse outcomes, including sleep deprivation, stress, depression, and mood fluctuations (Tiamiyu

et al., 2024). According to the World Health Organization (2019), behavioral and emotional problems among adolescents have become a major mental health concern in recent years, with 10 to 20% of adolescents worldwide experiencing some form of psychological disorder. As noted by Lai et al. (2023), problematic internet use is considered one of the contributing factors underlying these types of psychological and behavioral disturbances in adolescents.

One strategy that assists adolescents in confronting these disturbances and managing their emotions is emotion regulation (Blanke et al., 2020). The emotion regulation process, whereby individuals adjust their affective states to better adapt to their environment (Fombouchet et al., 2023), is critical for maximizing mental well-being (Tamir et al., 2024). Emotion regulation is an important therapeutic skill for individuals who exhibit greater emotional reactivity or struggle to cope with their feelings (Messina et al., 2022). For many individuals, emotion regulation skills significantly improve throughout adolescence. However, for others, adolescence is characterized by the onset or exacerbation of psychological distress marked by difficulties in emotion regulation (Silvers, 2022). Abousaedi et al. (2024) categorized cognitive emotion regulation strategies into two main groups: adaptive strategies (e.g., acceptance, reappraisal, problem-solving, or distraction) and maladaptive strategies (e.g., rumination, catastrophizing, self-blame, or blaming others). Consistent with this, Hadadian et al. (2021) found that individuals who rely more on maladaptive emotion regulation strategies are more likely to engage in problematic internet activities. The relationship between problematic internet use and maladaptive emotion regulation is bidirectional (Zsido et al., 2020). This implies that individuals with problematic internet use are more inclined to use maladaptive emotion regulation strategies when experiencing negative affect, and following that, the use of maladaptive strategies creates the necessary context for increased problematic internet use (Günaydın et al., 2022).

Shooraki et al. (2022) found that maladaptive emotions constitute a significant determinant of academic dishonesty, a finding that is further supported by Tindall et al. (2021). In a separate study, Armanyous and Paparo (2024), examined the effect of mindfulness and emotion self-regulation on the intention to cheat academically. They concluded that emotion self-regulation can significantly mitigate the propensity for academic cheating. In a study conducted by Galil et al. (2021), the relationship between emotion regulation and academic dishonesty was examined from a different perspective. Their findings indicated that individuals may sometimes employ cognitive emotion regulation strategies to rationalize their cheating behaviors, which in turn can contribute to an increase in academic dishonesty.

Academic dishonesty has become a significant area of focus in psychological research due to its negative impact on adolescents' academic performance. According to researchers in this field, problematic internet use is considered as key exacerbating factor for dishonest academic behavior. This means that adolescents who spend excessive amounts of time online may be prone to reduced

self-control and increase in deceptive behaviors within the educational environment. Within this context, adaptive and maladaptive cognitive emotion regulation strategies play a crucial role in emotional management and the manifestation of academic behaviors. While adaptive strategies can help curtail dishonest conduct, maladaptive strategies may actually intensify these behaviors. Therefore, investigating the mediating role of cognitive emotion regulation strategies in the relationship between problematic Internet use and academic dishonesty can contribute to a better understanding of this phenomenon and inform the development of effective intervention strategies for its reduction.

Materials and Methods

Design

This study was conducted using a descriptive-correlational research design.

Participants

The statistical population comprised high school students in Eqlid during 2024-2025 academic year. Considering the requirements of model-based statistical analyses and recommended sample sizes for correlational and mediation modeling, a total of 385 students were selected. Participants were selected using convenience sampling, whereby accessible students who expressed willingness to participate were invited to respond to the designed questionnaires. Inclusion criteria for this study were: enrollment in a high school in Eqlid, age ranging between 12 to 18, and provision of informed consent. Conversely, the exclusion criteria included incomplete or flawed questionnaire responses and withdrawal of the student's consent to participate.

Instruments

The following instruments were utilized to measure the variables in this research:

The Academic Dishonesty (AD) Questionnaire: It was originally developed by McCabe and Treviño (1996), and employed to assess academic dishonesty. This instrument consists of 10 items across two dimensions: cheating on exams and cheating on assignments, answered on a 5-point Likert scale ranging from 1 (Never) to 5 (Always), featuring items such as, "I submit the main work of an individual assignment done by someone else as my own" (McCabe and Treviño, 1996). McCabe and Treviño (1996) reported reliability and validity coefficients of 0.83 for the scale. Furthermore, in a study by Ganjali (2021), the content, face, and criterion validity of this questionnaire were evaluated and deemed appropriate. The Cronbach's alpha coefficient calculated by Ganjali (2021) for this questionnaire was estimated to be above .70.

The Problematic Internet Use Questionnaire: It was initially designed by Kaplan in 2002 and subsequently revised in 2010. This questionnaire contains 15 items distributed across 5 components: preference for online social interaction, mood regulation, preoccupation, compulsive use of the Internet, and negative consequences. It is scored using a 7-point Likert scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree), and assesses problematic internet use with items such as, "I prefer online social interaction over face-to-face communication." The reliability and validity of the original version were reported by Kaplan (2010) as 91% and 85%, respectively. In Iran, in a study conducted by Ahmadpour et al. in 2018 involving 986 participants across three medical universities, the overall reliability of the questionnaire was calculated as .925. Furthermore, factor analysis confirmed that the questionnaire possessed the intended number and nature of variables being measured. In this research, the overall validity of the questionnaire, as well as the validity of each individual item with the exception of two, was reported to be above .80.

The Cognitive Emotion Regulation Strategies Questionnaire: It was designed and developed by Garnefski and Kraaij (2006) to measure cognitive emotion regulation strategies. This questionnaire contains 18 items and is composed of two categories of strategies, maladaptive and adaptive, organized across 9 components: self-blame, rumination, catastrophizing, blaming others, positive refocusing, refocusing on planning, acceptance, positive reappraisal, and perspective taking. It assesses cognitive emotion regulation strategies based on a Likert scale using items such as, "The teacher and students in class ask me to explain how to solve problems." In an internal consistency check of the 18-item Garnefski and Kraaij Cognitive Emotion Regulation Questionnaire, the lowest Cronbach's alpha for the self-blame subscale was 68%, and the highest Cronbach's alpha belonged to the positive reappraisal and catastrophizing subscales with an alpha of .81. These results confirm adequate and acceptable internal consistency for this questionnaire. The validity of the short form of the Persian version of this questionnaire was examined by Hasani in 2011 using three methods: factor analysis, criterion-related validity, and the correlation between subscales, where he reported the Cronbach's alpha for the short Persian form of this questionnaire to be .75.

Ethical Considerations

Ethical standards governing research involving human participants were strictly adhered to in this study. Prior to participation, all respondents were adequately informed about the purpose of the research, the voluntary nature of their involvement, and the confidentiality of their responses, and informed consent was obtained accordingly. Given the use of self-report questionnaires and the adolescent population, special care was taken to ensure anonymity and to minimize any potential psychological discomfort. Participants were assured that the collected data would be used exclusively for academic and research purposes and that they could discontinue participation at

any point without penalty. The study was conducted in accordance with recognized ethical guidelines for psychological research.

Results

Table 1 reports the dispersion indices and the results of the skewness and kurtosis tests to check the normality of the data.

Table 1. Mean, standard deviation, skewness, and kurtosis of research variables

Variable	Mean	Standard deviation	Skewness	Kurtosis
Academic dishonesty	22.33	9.04	.559	-.202
Problematic internet use	55.97	18.98	-.101	-.528
Maladaptive cognitive emotion regulation strategies	24.29	5.63	-.029	.293
Adaptive cognitive emotion regulation strategies	31.25	7.02	-.089	-.143

The mean and standard deviation values indicate an appropriate distribution of the data, while skewness and kurtosis values suggest that the data are approximately normally distributed. Prior to conducting structural equation modeling (SEM), the underlying assumptions were examined. One key assumption is an adequate sample size, which was met with a total of 385 participants. Another assumption concerns the absence of outliers; inspection of the data confirmed that no outliers were present. The normality assumption, required for SEM, was also satisfied, as skewness and kurtosis values for all variables were within acceptable ranges. The Kolmogorov-Smirnov test was also used for normality, and the results in Table 2 showed that the variables were normal.

Table 2. Normality of data using the Kolmogorov-Smirnov test

Variable	Statistic	df	Sig.
Academic dishonesty	.018	385	.200
Problematic internet use	.032	385	.108
Maladaptive cognitive emotion regulation strategies	.046	385	.054
Adaptive cognitive emotion regulation strategies	.044	385	.076

Additionally, the presence of correlations among the study variables, another prerequisite for SEM, was confirmed, as reported in Table 3.

Table 3. Correlation between research variables

Variable	1	2	3	4
1. Academic dishonesty	1			
2. Problematic internet use	.383**	1		
3. Maladaptive cognitive emotion regulation strategies	.244**	.317**	1	
4. Adaptive cognitive emotion regulation strategies	-.111*	-.241**	-.119*	1

** $p < .01$, * $p < .05$

According to Table 3, academic dishonesty was positively and significantly correlated with problematic internet use and maladaptive cognitive emotion regulation strategies at the 0.01 significance level. In contrast, academic dishonesty was negatively and significantly associated with adaptive cognitive emotion regulation strategies at the .05 significance level. Similarly, problematic internet use demonstrated a positive and significant correlation with maladaptive emotion regulation strategies ($p < .01$) and a negative and significant correlation with adaptive emotion regulation strategies ($p < .05$).

To analyze the study hypotheses, structural equation modeling was employed. Compared to other analytical methods, SEM allows researchers to test complex theoretical models within a single unified framework. The fitted model, illustrated in Figure 1, depicts the study variables and the relationships among them.

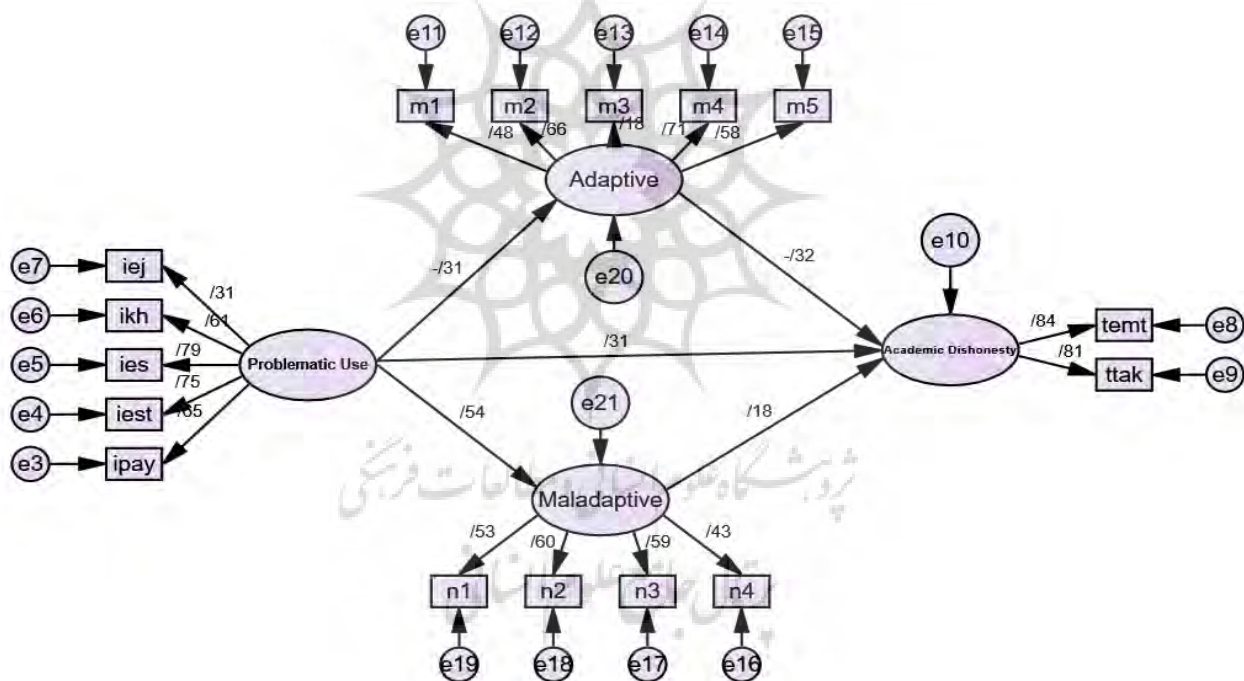


Figure 1. Structural model of academic dishonesty based on problematic internet use with the mediating role of adaptive and maladaptive emotion regulation strategies

Table 4 presents the fit indices of the tested model. According to the criteria proposed by Gefen et al. (2000), the tested model demonstrates an overall good fit with the collected data.

Table 4. Fit Indices of the Proposed Research Hypotheses Model

Index	CMIN	df	CMIN/df	GFI	AGFI	RMSEA	CFI	IFI	TLI
Minimum Acceptable			≤ 3	$90 >$	$90 >$	$\leq .08$	$90 >$	$90 >$	$90 >$
Reported Value	236.702	99	2.391	.93	.90	.060	.91	.91	.90
Fit Status	-	-	Fit	Fit	Fit	Fit	Fit	Fit	Fit

Table 4 indicates that the proposed research model fits the data well, with the root mean square error of approximation (RMSEA) equal to .060., the normed chi-square (χ^2/df) was 2.391, and the goodness-of-fit index (GFI) was .93, all indicating a satisfactory fit. Other reported indices further support the adequacy of the proposed model.

Table 5. direct and indirect effect

Paths	direct effect	indirect effect
Problematic Internet Use → Academic Dishonesty	.308	.197
Problematic Internet Use → Maladaptive Emotion Regulation Strategies	.538	-
Problematic Internet Use → Adaptive Emotion Regulation Strategies	-.313	-
Maladaptive Emotion Regulation Strategies → Academic Dishonesty	.178	-
Adaptive Emotion Regulation Strategies → Academic Dishonesty	-.324	-

The results presented in Table 5 and Figure 1 indicate that problematic internet use has a positive and significant direct effect on academic dishonesty ($\beta = .308, p = .001$) and maladaptive emotion regulation strategies ($\beta = .538, p < .001$) while exerting a negative and significant direct effect on adaptive emotion regulation strategies ($\beta = -.313, p < .001$). Furthermore, maladaptive emotion regulation strategies had a positive and significant direct effect on academic dishonesty ($\beta = .178, p < .001$), whereas adaptive emotion regulation strategies had a negative and significant direct effect on academic dishonesty ($\beta = -.324, p < .001$). To estimate and determine the significance of indirect paths, the bootstrap procedure in AMOS software was applied.

Table 6. Bootstrap Estimates of Indirect Effects

Paths	Estimate	sig	Lower Bounds	upper bounds	Result
Problematic internet use → Adaptive strategies → Academic dishonesty	.037	.001	.051	.177	Supported
Problematic internet use → Maladaptive strategies → Academic dishonesty	.068	.012	.047	.276	Supported

According to Table 6, the lower and upper bounds of the confidence interval for adaptive emotion regulation strategies as a mediator between problematic internet use and academic

dishonesty were .051 and .177, respectively ($p < .001$). For maladaptive emotion regulation strategies, the corresponding confidence interval bounds were .047 and 0.276 ($p = .012$). Therefore, based on the confidence level ($p < .05$), both adaptive and maladaptive cognitive emotion regulation strategies serve as significant mediators in the relationship between problematic internet use and academic dishonesty.

Discussion

The present study was conducted with the aim of explaining the relationship between Problematic Internet Use (PIU) and Academic Dishonesty (AD) mediated by adaptive and maladaptive cognitive emotion regulation strategies in adolescents. According to the findings, problematic Internet use has a direct and significant effect on academic dishonesty. This result is consistent with the findings of previous studies such as Harper (2006), Desiron and Petko (2023), and Raj et al. (2022), regarding the direct and positive effect of problematic internet use on academic dishonesty.

This finding indicates that excessive internet use increases the likelihood of behaviors constituting academic dishonesty, such as plagiarism, copying assignments, or cheating, by weakening self-control and self-regulation in students. This analysis is in line with the results of research by Armanyous and Paparo (2024) and Xu et al. (2024), who demonstrated how excessive internet use fosters the emergence of unethical academic behaviors by undermining self-control. In a similar analysis, Baumeister et al. (2024) referred to the theory of self-depletion, viewing self-regulatory resources as limited. This implies that excessive internet use, such as aimless browsing, online gaming, or prolonged social media interactions, depletes an individual's self-regulatory capacity, thus leading the individual to exhibit less resistance to temptations like cheating and plagiarism.

In another explanation for the relationship between problematic Internet use (PIU) and academic dishonesty (AD), one can refer to the role of time and cognitive constraints. Hazelhurst et al. (2011), in their study, examined the relationship between problematic internet use and academic dishonesty from this perspective, stating that students who spend a lot of time in cyberspace face a shortage of time to complete their academic assignments on schedule. This time scarcity, especially when faced with deadlines from their instructors, pushes them towards deviant yet immediately accessible strategies such as cheating, copying others' assignments, or plagiarism. The above explanation, alongside the model based on self-regulation depletion mentioned earlier, indicates that problematic internet use can increase the probability of unethical behaviors through multiple pathways (self-regulation depletion and time deprivation).

Investigating the mediating role of emotion regulation strategies in the effect of problematic internet use (PIU) on academic dishonesty (AD) was another question addressed by this research.

The findings indicated that maladaptive emotion regulation strategies strengthen the relationship between problematic internet use and academic dishonesty. This finding is consistent with the results of studies by Ahmadi et al. (2025), Young (1998), Aldao et al. (2014), and Zsido et al. (2020), which have shown that individuals using maladaptive emotion regulation strategies are more prone to engaging in problematic behaviors. Ahmadi et al. (2025), Tindall et al. (2021), Liang et al. (2021), and also Gunaydin et al. (2022) have also pointed to a reciprocal relationship between problematic internet use and maladaptive emotion regulation strategies in their research. In their studies, individuals who use maladaptive emotion regulation strategies are more involved in excessive internet use, which exposes them to a higher risk of committing unethical behaviors. For example, Jeong et al. (2019) examined engaging in online gaming as an escape route for adolescents to relieve life stresses, especially academic stresses. They concluded that this, over time, increases internet addiction among adolescents and, for the reasons mentioned, increases academic dishonesty. This finding was also examined in the research by Liang et al. (2021), yielding similar results. In fact, maladaptive emotion regulation strategies, particularly rumination and catastrophizing, maintain the individual's attention consistently focused on the distressing subject by intensifying and solidifying negative emotional cycles. This keeps the nervous system active and causes the initial negative emotions to transform into stronger ones. The continuation of this cycle ultimately drains the cognitive resources essential for self-regulation. Under these conditions, individuals who resort to problematic internet use exhibit more irrational reactions when placed in stressful situations compared to those who utilize adaptive emotion regulation strategies.

Another question addressed by this research was investigating the mediating role of adaptive emotion regulation strategies in the effect of problematic internet use (PIU) on academic dishonesty (AD). According to the results of the present study, adopting adaptive strategies in emotion regulation weakens the effect of problematic internet use on the occurrence of academic dishonesty. Rahmati and Saber (2018), Mottahedin et al. (2023), and Chamarro et al. (2024) also reached similar conclusions in their research. Casale et al. (2016), and Amendola et al. (2019) demonstrated that when adaptive emotion regulation strategies are insufficient or unavailable, individuals engage in problematic Internet use as an alternative means of regulating negative emotions.

This implies that students who use adaptive strategies when facing stressful situations do not turn to cheating and behaviors constituting academic dishonesty, even if they overuse the Internet. Gross's (1998) Process Model Theory also confirms this concept. According to this model, adaptive strategies such as cognitive reappraisal, problem-focused coping, and acceptance enable individuals to modulate their emotional responses at different stages, before they lead to maladaptive behaviors. Therefore, an adolescent who utilizes adaptive emotion regulation strategies is capable of managing the negative emotions arising from excessive internet use. For

example, by employing cognitive reappraisal, they can redefine failure in an online game as a minor and insignificant event, thereby reducing the intensity of negative emotion and preserving their cognitive capacity to focus on the real world. Alternatively, by using a problem-solving strategy, instead of getting caught in the endless cycle of surfing the Internet to escape stress from school assignments, they can directly seek a solution for their schoolwork. These processes directly prevent the transformation of negative emotions into cheating. Based on the results of this research, training students in adaptive emotion regulation strategies is essential because the use of these strategies not only is considered as a skill for managing emotions but it also acts as a protective shield against problematic Internet use and its transformation into unethical academic behaviors. The necessity of raising students' awareness about the harms of problematic internet use - which exacerbates academic dishonesty through the strengthening of maladaptive emotion regulation strategies - becomes clearly evident.

Conclusion

The findings of this research can serve as a basis for educational and psychological interventions in schools. Designing and implementing educational programs based on teaching adaptive emotion regulation strategies and the responsible use of the internet can lead to a reduction in the tendency toward cheating among adolescents. Finally, this study emphasizes the importance of paying attention to psychological factors such as emotion regulation in explaining academic dishonesty behaviors. On the other hand, given the ever-increasing spread of digital technologies in the lives of adolescents, conducting more research in this field can help in better understanding adolescent behaviors.

Despite achieving valuable findings, this research also faced several limitations. Among the limitations of this study, the use of the convenience sampling method poses challenges for the generalizability of the results. Another limitation is the reliance on self-report questionnaires, as in this research, the respondent's biases may compromise the accuracy of the answers. It is recommended that longitudinal methods and random sampling be used in future investigations so that causal relationships can be examined and analyzed with greater precision. Furthermore, examining the role of other variables such as social support and personality traits can offer a more comprehensive understanding of this phenomenon.

Author Contributions

For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used “Conceptualization, X.X. and Y.Y.; methodology, X.X.; software, X.X.; validation, X.X., Y.Y. and Z.Z.; formal analysis, X.X.; investigation, X.X.; resources, X.X.; data curation, X.X.; writing—original draft preparation, X.X.; writing—review and editing, X.X.; visualization, X.X.; supervision, X.X.; project administration, X.X.; funding acquisition, Y.Y. All authors have read and agreed to the published version of the manuscript”” Please turn to the [CRediT](#) taxonomy for the term explanation. Authorship must be limited to those who have contributed substantially to the work re-reported.

Data Availability Statement

Data available on request from the author

Acknowledgements

Our sincere thanks go to those who have accompanied us in this research.

Ethical considerations

The authors avoided from data fabrication and falsification.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of interest

The authors declare no conflict of interest.

Conflict of interest

There are no conflicts of interest.

References

- Abousaedi Jirofti, S., Nemati Sogolitappeh, F., Hashemi Nosrat Abad, T., & Taleblu, M. J. S. P. R. (2024). The relationship between shame and problematic use of the Internet; The mediating role of impulsivity and maladaptive emotion regulation. *Iranian Journal of Learning and Memory*, 8(6), 113-125. <https://doi.org/10.22034/spr.2024.442601.1920>
- Ahmadi, M., Safaei, I., & hamdani pour, Z. (2025). The relationship between social anxiety and problematic smartphone use among elite student athletes: The Mediating role of maladaptive cognitive emotion regulation strategies. (e238450). *Iranian Journal of Learning and Memory*, 8(29), e238450. <https://doi.org/10.22034/iepa.2026.560112.1554>
- Ahmadpour, J., Asghari, S., Soltanian, A., Mohammadi, Y., & Poorolajal, J. (2018). *Evaluation of validity and reliability of Persian version of Problematic Internet Use (PIU) questionnaire*.
- Aldao, A., Jazaieri, H., Goldin, P. R., & Gross, J. J. J. J. o. a. d. (2014). Adaptive and maladaptive emotion regulation strategies: Interactive effects during CBT for social anxiety disorder. *Iranian Journal of Learning and Memory*, 8(4), 382-389. <https://doi.org/10.1016/j.janxdis.2014.03.005>
- Amendola, S., Spensieri, V., Guidetti, V., & Cerutti, R. J. J. o. P. (2019). The relationship between difficulties in emotion regulation and dysfunctional technology use among adolescents. *Frontiers in Psychology*, 25(1), 10-17. <https://hdl.handle.net/11573/1231956>
- Armanyous, C., & Paparo, J. J. J. o. A. E. (2024). The influence of trait mindfulness and self-regulatory efficacy on academic cheating intention. 1-24. <https://doi.org/10.1007/s10805-024-09559-y>
- Baumeister, R. F., André, N., Southwick, D. A., & Tice, D. M. J. C. O. i. P. (2024). Self-control and limited willpower: Current status of ego depletion theory and research. *Frontiers in Psychology*, 60, 101882. <https://doi.org/10.1016/j.copsyc.2024.101882>
- Blanke, E. S., Brose, A., Kalokerinos, E. K., Erbas, Y., Riediger, M., & Kuppens, P. J. E. (2020). Mix it to fix it: Emotion regulation variability in daily life. 20(3), 473. <https://psycnet.apa.org/doi/10.1037/emo0000566>
- Bour, C., Ahne, A., Schmitz, S., Perchoux, C., Dessenne, C., & Fagherazzi, G. J. J. o. M. I. R. (2021). The use of social media for health research purposes: scoping review. 23(5), e25736.
- Casale, S., Caplan, S. E., & Fioravanti, G. J. A. b. (2016). Positive metacognitions about Internet use: The mediating role in the relationship between emotional dysregulation and problematic use. 59, 84-88. <https://doi.org/10.1016/j.addbeh.2016.03.014>
- Chamarro, A., Díaz-Moreno, A., Bonilla, I., Cladellas, R., Griffiths, M. D., Gómez-Romero, M. J., & Limonero, J. T. J. B. p. h. (2024). Stress and suicide risk among adolescents: the role of problematic internet use, gaming disorder and emotional regulation. 24(1), 326.
- Cheng, T. W., Mills, K. L., Pfeifer, J. H. J. N., & Reviews, B. (2024). Revisiting adolescence as a sensitive period for sociocultural processing. 105820. <https://doi.org/10.1016/j.neubiorev.2024.105820>
- Désiron, J. C., Petko, D. J. E., & technologies, I. (2023). Academic dishonesty when doing homework: How digital technologies are put to bad use in secondary schools. *Iranian Journal of Learning and Memory*, 28(2), 1251-1271. <https://doi.org/10.1007/s10639-022-11225-y>
- Fombouchet, Y., Pineau, S., Perchec, C., Lucenet, J., & Lannegrand, L. J. S. D. (2023). The development of emotion regulation in adolescence: What do we know and where to go next? *Iranian Journal of Learning and Memory*, 32(4), 1227-1242. <https://doi.org/10.1111/sode.12684>

- Galil, A., Gidron, M., Yarmolovsky, J., Geva, R. J. P. B., & Review. (2021). Cognitive strategies for managing cheating: The roles of cognitive abilities in managing moral shortcuts. 28(5), 1579-1591. <https://doi.org/10.3758/s13423-021-01936-7>
- Garnefski, N., & Kraaij, V. (2006). Cognitive emotion regulation questionnaire—development of a short 18-item version (CERQ-short). *Personality and Individual Differences*, 41 (6), 1045-1053. <https://doi.org/10.1016/j.paid.2006.04.010>
- Gross, J. J. J. R. o. g. p. (1998). The emerging field of emotion regulation: An integrative review. *Personality and Individual Differences*, 2(3), 271-299. <https://doi/abs/10.1037/1089-2680.2.3.271>
- Günaydın, N., Kaşko Arıcı, Y., Kutlu, F. Y., & Yancar Demir, E. J. J. o. c. p. (2022). The relationship between problematic Internet use in adolescents and emotion regulation difficulty and family Internet attitude. 50(2), 1135-1154. <https://doi.org/10.1002/jcop.22708>
- Hadadian, F., Tehranizadeh, M., Pakdel, M. J. B. J. o. s., Adolescents, P. i., & Youth. (2021). The roles of family, emotion regulation strategies, and mental health in the problematic Internet Use. 2(1), 61-71.
- Harper, M. G. J. N. E. T. (2006). High tech cheating. *Iranian Journal of Learning and Memory*, 26(8), 672-679. <https://doi.org/10.1016/j.nedt.2006.07.012>
- Hasani, J. (2011). The reliability and validity of the short form of the cognitive emotion regulation questionnaire. *Frontiers in Psychology*.
- Hazelhurst, S., Johnson, Y., & Sanders, I. J. a. p. a. (2011). An empirical analysis of the relationship between web usage and academic performance in undergraduate students. <https://doi.org/10.48550/arXiv.1110.6267>
- Jeong, E. J., Ferguson, C. J., Lee, S. J. J. J. o. y., & adolescence. (2019). Pathological gaming in young adolescents: A longitudinal study focused on academic stress and self-control in South Korea. 48(12), 2333-2342. <https://doi.org/10.1007/s10964-019-01065-4>
- Ko. ybska, M., Radlińska, I., Kolwitz, M., Karakiewicz, B. J. I. J. o. E. R., & Health, P. (2023). Problematic internet use among polish students: prevalence, relationship to sociodemographic data and internet usage patterns. *Frontiers in Psychology*, 20(3), 2434. <https://doi.org/10.3390/ijerph20032434>
- Krienert, J. L., Walsh, J. A., & Cannon, K. D. J. C. T. (2022). Changes in the tradecraft of cheating: Technological advances in academic dishonesty. *Frontiers in Psychology*, 70(3), 309-318. <https://doi.org/10.1080/87567555.2021.1940813>
- Lai, W., Wang, W., Li, X., Wang, H., Lu, C., Guo, L. J. E. c., & psychiatry, a. (2023). Longitudinal associations between problematic Internet use, self-esteem, and depressive symptoms among Chinese adolescents. *Frontiers in Psychology*, 32(7), 1273-1283. <https://doi.org/10.1007/s00787-022-01944-5>