University of Hormozgan

Iranian Journal of Educational Research

Print ISSN: 1735 - 563X Online ISSN: 2980 - 874X

Homepage: http://ijer.hormozgan.ac.ir

Educational and Behavioral Research Center

Perceived Utility of Generative AI: Implications for Academic Self-Regulation and learning autonomy among Students

Aboosaeed Davarpanah[1], **Bahman Kord**[✉2]

1. Assistant Professor Department of Education, Faculty of Educational Sciences and Psychology, University of Sistan and Baluchestan, Zahedan, Iran

2. Association Professor Department of Psychology, Mah.C., Islamic Azad University, Mahabad, Iran, bahmankord@iau.ac.ir

Article Info

Article type:

Research Article

Article history:

Received 28 Aug. 2026

Received in revised form 14 Sep. 2026

Accepted 24 Oct. 2026

Published online 1 Mar. 2027

Keywords:

Generative AI,
Academic Self-Regulation,
Learning Autonomy,
Mixed-Methods Research

ABSTRACT

Objective: This study aims to investigate how students perceive GenAI tools and to explore the relationship between these perceptions, their self-regulated learning strategies, and their sense of learning autonomy.

Methods: A sequential explanatory mixed-methods design was employed. In the quantitative phase, 224 undergraduate students of Islamic Azad University, Mahabad Branch, who were selected through convenience sampling, were assessed with valid scales measuring GenAI perception, self-regulated learning, and independence in learning. Subsequently, in the qualitative phase, semi-structured interviews were conducted with 20 participants to gain deeper insights into the underlying mechanisms of these relationships. Quantitative data were analyzed using regression analysis with method stepwise, and qualitative data underwent thematic analysis.

Results: The quantitative results revealed that while positive perceptions of GenAI utility correlate with increased engagement, there is a nuanced tension between perceived ease-of-use and the maintenance of self-regulated learning habits. The qualitative findings identified three primary themes: (1) Gen AI as a personalized scaffold, (2) the risk of "cognitive offloading" undermining autonomy, and (3) the necessity for new metacognitive strategies.

Conclusions: This research indicates that while generative artificial intelligence can enhance learning efficiency, it also presents challenges for "academic self-regulation." Therefore, in the era of generative AI, the educational objective should be to cultivate learners who possess critical self-regulatory skills and learning autonomy—enabling them to guide and evaluate AI, and to move beyond it, rather than becoming overwhelmed or dominated by it.

Cite this article: Davarpanah, A. & Kord, B. (2027). Perceived utility of generative AI: Implications for academic Self-Regulation and learning autonomy among students. *Iranian Journal of Educational Research*, *6*(1), 1-16.
. DOI: https://doi.org/

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Publisher: University of Hormozgan.
DOI: https://doi.org/

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Introduction

The landscape of higher education is undergoing a seismic shift, driven by the unprecedented integration of transformative technologies. Among these, Generative Artificial Intelligence (Gen-AI) has emerged as a disruptive force, redefining the boundaries of knowledge acquisition, content creation, and pedagogical interaction (Alqurni, 2026; Zhai & Wibowo, 2023). While traditional digital tools served as passive conduits for information, GenAI exemplified by Large Language Models (LLMs)—functions as an active, co-creative agent capable of synthesizing complex information and generating sophisticated textual and visual outputs (Admiraal et al., 2024; Cotton et al., 2024).

This technological leap presents a profound paradox for contemporary students. On one hand, Gen AI offers unparalleled opportunities for personalized learning, acting as a highly responsive "scaffold" that can tailor educational content to individual student needs, thereby potentially enhancing learning efficiency and accessibility (Tsiani et al., 2024). On the other hand, the seamlessness of AI-generated assistance raises critical concerns regarding the erosion of essential cognitive processes. There is a growing scholarly apprehension that over-reliance on Gen AI may lead to "cognitive offloading," where students outsource critical thinking, problem-solving, and synthesis tasks to algorithms, ultimately undermining their learning autonomy (Dal Ponte et al., 2025; Broadbent & Poon, 2015; Chen, Samad, & Kim, 2025).

Central to this tension is the concept of Self-Regulated Learning (SRL). According to Self-Determination Theory (SDT), academic success and psychological well-being are contingent upon the fulfillment of autonomy, competence, and relatedness (Ryan & Deci, 2000; Wang et al., 2019; Rashid et al., 2020). In the context of the Gen AI era, the ability of a student to autonomously regulate their learning processes—setting goals, monitoring progress, and adjusting strategies—is being tested in ways never before seen. If Gen AI is used as a mere "shortcut" to bypass cognitive effort, it may severely disrupt the development of self-regulatory habits, leading to a superficial engagement with academic material.

Despite the burgeoning interest in AI in education, a significant research gap persists. Current literature has largely focused on the "acceptance" of AI tools (e.g., through the lens of the Technology Acceptance Model) or the immediate implications for academic integrity (Zimmerman, 2002; Dogaru et al., 2025; Almulla, 2024). However, there is a paucity of empirical

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research that explores the deep, structural relationship between students' perceptions of Gen AI and their internal regulatory mechanisms, specifically the interplay between academic self-regulation and learning autonomy. We lack a comprehensive understanding of whether Gen AI acts as a catalyst for higher-order metacognitive skills or as a crutch that diminishes learner agency. To address this gap, the present study employs a sequential explanatory mixed-methods design to investigate how university students perceive Gen AI tools and how these perceptions correlate with their self-regulated learning strategies and sense of autonomy. By combining quantitative analysis with qualitative thematic inquiry, this research seeks to provide a holistic view of the cognitive and behavioral shifts occurring in the Gen AI era. The findings aim to inform educators and policymakers on how to use "Gen-AI" ensure that the next generation of students can leverage artificial intelligence without sacrificing the very Self-Regulated Learning (SRL) and Learning Autonomy. Although prior studies have extensively explored various dimensions of technology acceptance, perceived ease of use, and academic integrity challenges surrounding generative AI, a significant empirical and theoretical void persists regarding the underlying mechanisms through which these tools influence students' cognitive and motivational processes. Specifically, while existing literature has predominantly focused on the instrumental aspects of AI, there remains a critical lack of clear understanding concerning how students' perceived utility of generative AI interacts with the core regulatory mechanisms of academic self-regulation and learning autonomy. It remains unclear whether a positive perception of AI's utility acts as a cognitive scaffolding that enhances learner independence or, conversely, facilitates cognitive offloading that undermines students' agency and self-regulation. Therefore, the present study aims to bridge this structural gap by employing an explanatory sequential mixed-methods design.

Self-Regulated Learning (SRL) is defined as an active, emic process wherein learners set goals, monitor their cognitive progress, and employ metacognitive strategies to achieve academic objectives (Pintrich, 2000; Hertel et al., 2021; Li et al., 2023; Soleimani Davoodli et al., 2022). Learning Autonomy, refers to the degree of agency and self-governance a student exercises over their learning trajectory (Ryan & Deci, 2000; Tanhaye Reshvanloo & Hejazi, 2022; Rashid et al., 2020). Within the framework of Self-Determination Theory (SDT), autonomy is not merely the absence of external control but the presence of intrinsic motivation and the ability to make informed, purposeful choices in the learning process.

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In traditional educational settings, SRL and learning autonomy are developed through incremental challenges that require sustained cognitive effort. However, the introduction of sophisticated digital tools necessitates a re-evaluation of these constructs. The central question is whether modern technology facilitates the "scaffolding" of autonomy or if it inadvertently shifts the learner from an active agent to a passive consumer of algorithmically generated content.

The integration of Generative Artificial Intelligence (Gen AI) into education introduces a complex duality into the learning ecosystem.

On one hand, Gen AI can function as a "Cognitive Scaffold." When used strategically, Gen AI tools can provide immediate feedback, clarify complex concepts, and assist in the brainstorming phase of problem-solving. This form of interaction can enhance SRL by providing students with a "virtual tutor" that supports metacognitive monitoring and helps manage cognitive load, thereby fostering a more autonomous learning environment (Zhai & Wibowo, 2023). In this view, Gen AI acts as an augmentative tool that extends the boundaries of human capability. On the other hand, there is the significant risk of "Cognitive Offloading." This phenomenon occurs when learners delegate essential cognitive tasks—such as critical analysis, synthesis, and evaluative thinking—entirely to the AI (Broadbent & Poon, 2015). Unlike traditional search engines that require the user to find and evaluate information, Gen AI provides direct, polished answers. This "effortless" retrieval can lead to a decline in the learner's need to engage in deep processing, potentially resulting in a paradoxical state where high levels of "perceived competence" are achieved through minimal actual cognitive engagement. Consequently, this may weaken the very self-regulatory mechanisms (e.g., effort regulation and metacognitive monitoring) that are vital for long-term academic success.

The relationship between a student's perception of Gen AI and their actual learning behavior is mediated by their level of AI Literacy and their existing self-regulatory habits. Research suggests that students with high baseline SRL tend to view Gen AI as a tool for enhancement, whereas students with lower self-regulation may perceive it as a mechanism for task avoidance (Cotton et al., 2024; Soleimani Davoodlijhnb bnhnhjnjjh et al., 2022).

Current literature lacks a cohesive model that explains how the perceived utility and ease of use of GenAI influence the tension between learning autonomy and dependency. This study seeks to

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bridge this gap by examining whether the perceived affordances of Gen AI correlate with a shift toward higher-order self-regulation or a descent into cognitive passivity.

Materials and Methods

In the present study, which employs an explanatory sequential mixed methods design, the research process is conducted in two distinct phases (quantitative and followed by qualitative), such that the data and results of the initial quantitative phase directly determine the orientation and content of the subsequent qualitative phase. In this research, the qualitative findings will explain and interpret the quantitative results through the following approaches:

1. Unpacking the "Whys" Behind Statistical Relationships

While the quantitative phase demonstrates whether the "perceived utility of artificial intelligence" is a significant predictor of self-regulated learning and autonomy, numerical coefficients alone cannot articulate the exact underlying causes of this phenomenon. In the qualitative phase (e.g., through in-depth interviews with students), researchers engage with real-world examples and ask students: "Why and how has the use of artificial intelligence increased (or decreased) your sense of autonomy in learning?" This approach uncovers the psychological and cognitive mechanisms operating behind the numbers.

2. Gaining Deep Insight into "Cognitive Offloading" versus "Cognitive Scaffolding"

Although quantitative data determine whether students predominantly utilize artificial intelligence as a cognitive scaffold or an offloading tool, the qualitative phase scrutinizes students' lived experiences through thematic analysis of their narratives. The qualitative researcher discovers precisely in which academic tasks (e.g., summarization, ideation, or final writing) students define and experience the boundary between "constructive assistance" and "the complete surrender of thinking to artificial intelligence." Consequently, the qualitative results breathe life into the quantitative model, maximizing the credibility and depth of the research findings.

Participants and Sampling

The quantitative phase included a sample of 224 undergraduate students from various majors at Islamic Azad University, Mahabad Branch. The sample of the present study was selected using convenience sampling method. Inclusion criteria for this study included undergraduate education, use of smart headphones, and experience using generative AI at least once, and exclusion criteria

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not having a laptop or computer, and Lack of experience using generative artificial intelligence; and studying at non-bachelor's level. The qualitative phase involved a purposive sampling of 20 students from the quantitative phase who had demonstrated use of various GenAI platforms.

Demographic Characteristics of the Qualitative Phase Participants (*N*=20)

To select the 20 participants for the qualitative phase, a purposive sampling strategy was employed, focusing on students who demonstrated the highest frequency and diversity of Generative AI platform usage in the quantitative phase. The demographic profile of the participants is detailed below (1):

Table 1. Demographic Characteristics of the Qualitative Phase Participants (N=20)

Demographic Characteristics	Category	*F*	P %
	Mail	8	40
Gender	female	12	60
	Humanities and Behavioral Sciences	7	35
	Engineering and Technology	6	30
Academic Disciplines	Basic and Medical Sciences	4	20
	Agricultural	3	15
	Low/Moderate (under 5 hours	3	15
Weekly GenAI Usage	Substantial (5 to 10 hours	9	45
	High/Intensive (more than 10 hours	8	40
Age	Ranging from 19 to 27 *M*=22.45 (*SD*=1.82SD		

Data Collection Instruments

Quantitative Phase Instruments

Three validated instruments were adapted and administered online:

Perception of Generative AI Scale (P-GAI): An 18-item scale adapted from Dal Ponte et al., (2025), measuring students' perceived usefulness, Perceived ease, and Support for autonomy of Gen AI on learning. Items were rated on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The reliability of subscale the perceived usefulness, perceived ease, and Support for autonomy is 0.85, 0.89, and 0.92, respectively. The adapted scale demonstrated strong internal consistency (Cronbach's $\alpha = 0.91$) and convergent validity (Composite Reliability, CR > 0.85; Average Variance Extracted, AVE > 0.50).

Self-Regulated Learning (SRL) Strategies: The 18-item scale adapted from Broadbent & Poon (2015), based on Pintrich's (2000) theoretical framework, assessed students' use of SRL strategies

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across dimensions such as goal setting, time management, effort regulation, and metacognitive monitoring. Responses were provided on a 5-point Likert scale (1 = Never, 5 = Always). This scale exhibited good reliability (Cronbach's α = 0.88) and construct validity.

Learning Autonomy Scale: A 12-item scale measuring perceived autonomy, adapted from Ryan & Deci (2000), focusing on students' sense of volition and self-endorsement in their academic pursuits. Items were rated on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The scale achieved a Cronbach's α of 0.85.

Qualitative Phase Instrument

Semi-Structured Interviews: A flexible interview protocol was developed to explore students' lived experiences with Gen AI. Questions focused on their typical usage patterns, perceived benefits and drawbacks, impact on their study habits, and strategies for maintaining academic integrity and autonomy. Interviews lasted approximately 45-60 minutes and were audio-recorded with participant consent.To ensure and enhance credibility, dependability, and confirmability in the qualitative phase of the mixed-methods study, rigorous strategies such as member checking, precise and systematic logging of research notes, and a structured data coding process were employed. These measures ensured an authentic representation of participants' lived experiences and maintained consistency in data categorization throughout the study.

Data Analysis

Quantitative Data Analysis

The data from the quantitative phase were analyzed using SPSS-22 software. Primary analyses included descriptive statistics, regression analysis, and reliability tests.

Qualitative Data Analysis

The audio-recorded interviews were transcribed verbatim and analyzed using thematic analysis, following the six-phase approach outlined by Braun and Clarke (2006). This involved familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. Qualitative data analysis software MAXQDA was utilized to manage and organize the coding process. The analysis focused on identifying recurring themes related to students' perceptions of Gen AI's on their self-regulation, learning autonomy, and the quantitative findings.

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Ethics statement

In this study, ethical and human considerations were strictly observed in accordance with standard scientific and academic research principles. Prior to the commencement of data collection (including both quantitative questionnaires and qualitative interviews), participants were informed of the research objectives, the voluntary nature of their participation, and their right to withdraw at any stage. To protect the rights and privacy of the participants, all collected data were treated as confidential. Furthermore, principles of impartiality, scientific integrity, and objectivity were maintained during the analysis and reporting of both qualitative and quantitative data, ensuring that the identity of all students remained anonymous.

Results

Quantitative findings

The descriptive indices of the variables are reported in Table 2. In order to further and more accurately examine the normality of the variables, the skewness and kurtosis coefficients were used as univariate normality and the Merdia coefficient as multivariate normality, the results of which are presented in the table below. The skewness and kurtosis values of all variables were within the permissible range.

Table 2. Descriptive Values for Research Variables

Variables	*M*	*SD*	Skewness	Kurtosis	result
Perceived usefulness	15.42	1.38	0.082	1.466	Normal
Perceived ease	19.53	2.54	0.036	-1.543	Normal
Support for autonomy	18.87	2.78	0.028	-1.856	Normal
Perception of artificial intelligence in learning	52.68	1.98	0.070	1.860	Normal
Academic self-regulation	48.56	2.82	-0.013	0. 190	Normal
Learning Autonomy	28.74	2.83	0.025	0.254	Normal
Multivariate (Mardia coefficient)	-	-	-	1.255	Normal

In Table 3, the correlation matrix of the variables is reported. So that a positive and significant relationship has been reported between the variables of academic self-regulation and learning independence with the criterion variable (perception of generative artificial intelligence).

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Table 3. Correlation Matrix of Research Variables

Variables	1	2	3	4	5	6
1. Perceived usefulness	1					
2. Perceived ease	0.61**	1				
3. Support for autonomy	0.65**	0.61**	1			
4. Perception of artificial intelligence in learning	0.64**	0.60**	0.62**	1		
5. Academic self-regulation	0.55**	0.48**	0.52**	0.46**	1	
6. Learning Autonomy	0.47**	-0.38**	0.45**	0.39**	0.52**	1

According to the data in Table 3, Pearson correlation test showed that there is a positive and significant relationship between positive perception of artificial intelligence total score (PAIL) and academic self-regulation (r=0.55, p<0.001) and learning independence (r=0.47, p<0.001). Among the components of the perception of the ease of GenAI, there is a negative and significant relationship (r=-0.38) with the Learning Autonomy.

Multiple regression analysis was used in a stepwise method, the results of which in the tables below show that the variables of academic self-regulation and learning independence entered the regression model, respectively, and no variable was excluded from the model.

Table 4. Analysis of Variance Related to the Regression Model of Predictor Variables with the Criterion Variable

Model	Variance resource	S.S	D.F	M.S	*F*	SIG.
1	Regression	151012.384	1	151012.384	340.527	<0.001
	Residual	98893.295	222	443.467		
	Total	249905.679	223	-		
2	Regression	170881.680	2	85440.840	240.061	<0.001
	Residual	79023.990	221	35.443		
	Total	249905.678	223			

According to the table 4, it is observed that the significance level of the test in two models is equal to P<0.001, it can be claimed that the above test is significant at the confidence level of 0.99.

Table 5. Multiple Correlation Coefficient and Coefficient of Determination for the Research Hypothesis

Model	Multiple correlation coefficient (R)	coefficient of determination (R2)	coefficient of determination Adjusted	standard error of the standard	deviation of the Durbin-Watson index
1	0/407	0/265	0/262	1.65	1.88
2	0/420	0/276	0/272	1.04	

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It can be seen in Table 5, Model 1, which is the academic self-regulation variable, has 0.162 percent of sharing and covariance (adjusted R square = 0.262). In model number 2, adding the learning independence variable to the model adds 1.1% of the explained variance (adjusted coefficient of determination = 0.271). This model explains a total of 27.2% of the total variance. Therefore, according to the adjusted coefficient of determination (R2), it can be stated that about 27% of the changes in students' perception of generate artificial intelligence are explained by changes in predictor variables: academic self-regulation and learning independence. Also, the Durbin-Watson index value is equal to 1.88 and since this value is between 1.5 and 2.5.

Table 6. T-Test and Coefficients in the Regression Model

	Non-standard coefficients		standard coefficients		
	B	Standard error	β	*t*	Sig.
Intercept	67.55	2.54	-	5.61	<0.001
Academic self-regulation	1.55	0.413	0.251	3.763	<0.001
Learning Autonomy	0.468	0.059	0.323	5.945	<0.001

According to the findings in Table 6, it can be seen that both models are significant the discriminant coefficients (beta) significance ($P \geq 0.05$). according to the column of standardized coefficients (β weights), we find that the contribution of academic self-regulation variable (0.251) and learning independence (0.323) are both significant in explaining the perception of artificial intelligence in learning. According to the column of standardized beta coefficients (β), it can be said that if the predictor variables: academic self-regulation and learning independence each increase by one standard deviation, it can be predicted that the perception of artificial intelligence in students' learning will increase by 0.251 and 0.323 standard deviations, respectively.

Qualitative Results: Thematic Analysis

The qualitative phase aimed to explain the “how” and “why” behind the quantitative paradoxes. Three predominant themes emerged from the interviews.

Theme 1: Gen AI as a Personalized Cognitive Scaffold

Participants who scored high in SRL described Gen AI as a “tutor” or “intellectual facilitator and partner.” They used the tool to deconstruct complex prompts, check their reasoning, and overcome “writer’s block.”

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"I don't ask it to write for me. I ask it to explain this concept in three different ways until it clicks. It's like having a tutor available at 2 AM." (Participant 04)

This theme explains the positive correlation between usefulness and autonomy: when used for metacognitive support, Gen AI enhances agency.

Theme 2: The Trap of Cognitive Offloading

A second, contrasting theme emerged from students with lower SRL scores. These participants described a tendency to use Gen AI as a "ghostwriter" to bypass thinking entirely. They reported a feeling of "mental laziness" and a reliance on the AI to provide the final output without critical review.

"Sometimes, it's just faster to let the AI do the heavy lifting. If it gives me a good answer, I don't feel the need to double-check it. It feels like I'm just a supervisor of a machine rather than a student." (Participant 12)

This finding provides the qualitative basis for the negative relation and path between Ease of Use and learning Autonomy.

Theme 3: The Emergence of Metacognitive Tension

Participants expressed a palpable tension between the efficiency of AI and the necessity of deep learning. They noted that while they achieved higher grades (efficiency), they often felt a decline in their ability to perform tasks without digital assistance (dependency).

"There is this weird feeling where I am getting more done, but I feel like my own brain is getting 'softer'. I worry that I am losing the ability to structure an argument from scratch." (Participant 09)

This theme highlights the need for a new framework of AI-integrated self-regulation.

Discussion

The present study aimed to investigate the intricate relationship between students' perceptions of Generative AI (Gen AI), academic self-regulation (SRL), and learning autonomy. Through a sequential explanatory mixed-methods approach, we identified a critical tension: while Gen AI can function as a powerful cognitive scaffold, it also poses a significant risk of facilitating cognitive offloading, which may undermine student agency.

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findings suggest that the positive correlation between perceived usefulness and learning autonomy is consistent with the concept of cognitive scaffolding (Pintrich, 2000; Zhai & Wibowo, 2023; Zimmerman, 2002; Dogaru et al., 2025; Dal Ponte et al., 2025). Similarly, the qualitative theme of "personalized teacher" suggests that students with high metacognitive monitoring use GenAI to fill gaps in their understanding and effectively increase their ability to complete complex academic tasks (Admiraal et al., 2024; Wang et al., 2019; Zhai & Wibowo, 2023). This perception supports the view of AI as an empowering tool that fosters competence and adequacy—a core component of self-determination theory; While, the significant negative relationship between Perceived Ease of Use and Learning Autonomy suggests a "dependency trap." When the cognitive effort required to complete a task is bypassed through Gen AI, students experience a form of Cognitive Offloading. Our qualitative data suggests that instead of using AI to support thought, some students use it to replace thought. This shift from "active learner" to "passive user" directly contradicts the principles of autonomy in SDT, as the source of causality and agency shifts from the student to the algorithm and artificial robots.

A key other contribution of this study is the identification of Self-Regulated Learning (SRL) as the critical variable in the AI-learning relationship. The results indicated that students with robust Metacognitive Monitoring skills could leverage Gen AI to enhance their autonomy, whereas those struggling with Effort Regulation were more susceptible to the negative effects of Gen AI. This finding expands upon theory Pintrich's (2000) framework by suggesting that in the Gen AI era, SRL is no longer just about managing time or resources, but about managing the interaction between human and artificial intelligence (Alqurni, 2026, Hertel & Karlen, 2021; Dal Ponte et al., 2025). Students who lack the ability to regulate their cognitive effort tend to fall into "algorithmic passivity," where the ease of AI-generated content diminishes the perceived need for deep processing. This supports the necessity of developing what we term AI-integrated self-regulation, where metacognitive skills are specifically directed toward evaluating, prompting, and verifying AI outputs.

Although this study has elucidated the complex dimensions of the relationship between generative artificial intelligence, academic self-regulation, and autonomy by combining quantitative and qualitative designs, the interpretation of the findings must be considered in light of several methodological limitations. These include the cross-sectional nature of the quantitative data, which

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precludes definitive causal inferences and the examination of developmental changes in these variables over time; the reliance of measurement instruments on self-reported data, which entails the potential for social desirability bias and the underreporting of total technological dependency; and the restriction of the statistical population to a specific academic context, which limits the generalizability of the results to other educational systems with varying technological infrastructures.

Given the nature of the present study, it is suggested that future research utilize longitudinal designs to track how long-term exposure to Gen AI impacts the development of self-regulated learning and autonomy in learning across the curriculum. Furthermore, examining the role of digital self-efficacy as a potential moderator could provide a more nuanced understanding of why some students thrive with AI while others become dependent.

Conclusion

This study sheds light on the complex interplay between Generative Artificial Intelligence (Gen AI), Academic Self-Regulation (SRL), and learning autonomy. The findings demonstrate that Gen AI is neither inherently beneficial nor detrimental to higher education; rather, its impact depends entirely on the student's self-regulatory and learning autonomy profile. While Gen AI functions as a powerful cognitive scaffold for students equipped with robust metacognitive monitoring it poses a severe "dependency trap" for those with deficits in effort regulation, leading to cognitive offloading and the erosion of intellectual agency.

Theoretically, this research advances existing academic frameworks by introducing the concept of "AI-integrated self-regulation," suggesting that traditional models of SRL must evolve to address the unique metacognitive demands of interacting with intelligent agents. Practically, the study urges a fundamental paradigm shift in higher education pedagogy and assessment. To counteract algorithmic passivity and the "Efficiency-Autonomy Gap," educators must transition away from evaluating static final products toward assessing the learning process itself. This entails integrating AI literacy as a core metacognitive competency, mandating reflective interaction logs, and designing assignments that preserve the essential "cognitive struggle" required for deep learning. Ultimately, the educational goal in the era of Gen AI must be the cultivation of learners who possess the critical self-regulatory and learning autonomy power to command, evaluate, and transcend artificial intelligence rather than be subjugated by it.

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Author contributions

All authors significantly contributed to this study.

Funding

According to the authors, this article has no financial support.

Conflict of interest

The authors report no conflict of interest.

Ethics statement

In this study, Informed consent was obtained from all participants. Anonymity and confidentiality were ensured throughout the data collection and analysis process. Participants were informed of their right to withdraw at any time without penalty.

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