

An Investigation of Writing Using ChatGPT Through McClelland's Theory

^{*1}Nur Huslinda Che Mat., ²Nur Maizura Lin., ³Suzana Hamzah., ⁴Laila Ulsi Qodriani., ⁵Noor Hanim Rahmat., ⁶Vivemarylne F. Mudin., ⁷Abdul Kabeer Abdul Aziz

^{1,2,3,5}Akademi Pengajian Bahasa, Universiti Pengajian Bahasa (UiTM), Shah Alam, Selangor

⁴Faculty of Arts and Education, Universitas Teknokrat, Sumatera, Indonesia

⁶Unit Praktikum, Institut Perguruan Keningau, Sabah

⁷Astro Awani Network Sdn. Bhd, Kuala Lumpur

***Corresponding Author**

DOI: <https://doi.org/10.47772/IJRISS.2026.102100014>

Received: 27 June 2026; Accepted: 07 July 2026; Published: 24 July 2026

ABSTRACT

In the digital age, artificial intelligence tools such as ChatGPT are increasingly used to support writing practices. Grounded in David McClelland's Theory of Needs (1965), this study explores writing strategies used by university students as well as their motivational needs to use ChatGPT. The study is based on the notion that by understanding what motivates students to write can inform teaching practice as well as how academic institutions currently expect students to use AI tools. This study employed a quantitative survey approach involving 150 undergraduate students from a public university in Malaysia. The instrument consisted of a five-point Likert-scale questionnaire containing 43 items adapted from established studies on writing strategies and ChatGPT usage. The adapted instrument demonstrated satisfactory validity and strong internal consistency, with Cronbach's alpha values ranging from .804 to .940. Findings reveal statistically significant differences in the needs of writers by gender ($p = 0.005$) but not by discipline ($p = 0.085$). This indicated that all three motivational needs were positively met by the students, showing moderate high levels of engagement. The Need for Achievement had strong positive correlations with Need for Power ($r = .602$, $p < .$ in the Present, Need for Autonomy ($r = .01$) and Affiliation ($r = .568$, $p < .01$). These results imply that achievement-oriented students are also more likely to self-regulate their effort and socialise with writing behaviour of others, which indicates an inter-related motivational profile. This study has large implications for writing teachers, and curriculum developers, suggesting that the interplay between motivational needs and AI tool usage should be considered when designing writing instruction.

Keywords: AI in education, ChatGPT, motivation, second language writing, writing strategies

INTRODUCTION

Background of Study

Writing is considered one of the most complex cognitive activities; this is particularly so for university students, especially nonnative writers. Even though grammatical competence is not easy to master, the challenges of ESL writers in Malaysian higher education are still different. Some of these challenges are organising ideas logically, maintaining argumentative rigor, and following disciplinary norms of academic discourse. Writing, according to Khairuddin et al. (2021) is not just a language exercise but also a strategic process to use cognitive and metacognitive, social and affective resources in a deliberate way.

Over the last two decades, the construct of writing strategies has been studied extensively in academia. Rahmat (2021) categorised strategies broadly between cognitive strategies (strategies that directly manipulate language and content) and metacognitive strategies (the monitoring and evaluation of one's writing process). For this reason, affective and social strategies have also been acknowledged to be important especially with second language learners who need to maintain control of anxiety, motivation, and collaboration (Raoofi et al., 2017). These strategies, in conjunction with others, represent the repertoire from which a group of capable writers can select to meet the demands of academic writing tasks.

Unlike many digital writing tools, ChatGPT has emerged as a general writing tool, differs from others presently available around in its accessibility, giving it a possibility to support various writing stages. Known as an artificial intelligence powered on OpenAI's large language model lets writers generate text, request for feedback, explore vocabulary and seek writing advice in the moment (Barrot, 2023). Youssef et al. (2024) noted that ChatGPT represents an intellectual engagement, which may cultivate critical thought and feelings of academic success in students; in which underscores the point that AI tools are not merely passive (i.e., 'plugins'), but rather as active participants, as co-authors in the writing experience. Yet, the motivational processes by which students adopt and internalize these tools into and through their writing are still poorly understood (Zare et al., 2025 & Hickman & Stoica, 2025).

These motivational dynamics can be examined through the lens of McClelland's (1965) Theory of Needs. The theory proposes that human behaviour is motivated by three basic needs: Need for Achievement (nAch), Need for Power (nPow) and Need for Affiliation (nAff). For example, in the context of writing, these needs align to specific strategic patterns; achievement-oriented writers engage in metacognitive planning and revising; power-oriented writers focus on seeking cognitive resources and regulating effort; and affiliation-oriented writers turn to social engagement and feedback from peers. The framework which ChatGPT has incorporated offers an easily misunderstood opportunity to analyze the mediating and enhancing effects of AI tools on each of these motivations.

Statement of Problem

Although writing strategies research has emerged and evolved significantly in the English as a Second Language (ESL) context, there is still a considerable gap that seeks to link motivational theory with student writing practices in an AI-enhanced learning environment. Research on writing strategies has largely focused on the use of these strategies in a vacuum without considering motivational constructs, treating strategy as an isolated technical skill rather than a reflection of deeper psychological needs (Teng et al., 2024 & Russell, 2023). Similarly, the research on ChatGPT in education has often focused on students' perception of usefulness and ease of use without linking AI engagement to existing motivation frameworks (Zogheib & Daniela, 2024 & Persson, 2025).

Another major point of concern is the motivational differences between demographic cohorts. Gender differences on writing motivation and strategy use have been demonstrated that female students generally exhibit greater levels of metacognitive engagement and affective regulation (Raoofi et al., 2017). The question is whether these gender differences in handwriting transfer to AI-assisted writing contexts. Theoretically, the literature in writing strategies gives little attention to academic disciplines. Do students in science and technology programs have a different approach towards writing tasks than those in social sciences and the humanities?

The lack of a theoretically based, empirically validated measure for evaluating motivational Writing Needs in AI-mediated contexts creates a meaningful methodological gap. This research addresses this gap by providing a newly developed and implemented survey instrument that is based on McClelland's (1965) motivational theory, and contemporary writing strategy research (Raoofi et al. 2017; Youssef et al. 2024). In doing so, the study does not only theorize the emergence of ChatGPT and its motivational model but also provides practical implications.

Objective of the Study and Research Questions

This study is done to explore needs in writing. Specifically, this study is done to answer the following questions.

- i. Is there a significant relationship between writers' needs across gender?

H₀₁: There is no significant relationship between writers' needs across gender.

- ii. Is there a significant relationship between writers' needs across disciplines?

H₀₂: There is no significant relationship between writers' needs and disciplines

- iii. How do learners perceive the need for power in writing?

- iv. How do learners perceive the need for affiliation in writing?

- v. How do learners perceive the need for achievement in writing?

- vi. Is there a significant relationship between achievement and power in writing?

H₀₃: There is no significant relationship between achievement and power in writing.

- vii. Is there a significant relationship between achievement and affiliation in writing?

H₀₄: There is no significant relationship between achievement and affiliation writing.

LITERATURE REVIEW

Theoretical Framework of the Study

McClelland Theory and Writing Motivation

McClelland's (1965) Theory of Needs, also known as the Three Needs Theory or the Acquired Needs Theory, under which human motivation is shaped by three dominant needs deriving from experience and culturally conditioned: the Need for Achievement (nAch), the Need for Power (nPow), and the Need for Affiliation (nAff). In contrast to models of motivation, McClelland maintained that these needs were not innate but rather learned over time through socialisation and individual experience, where motivation can be nurtured and developed over time (McClelland, 1965). In the context of academic writing, these three needs manifest in distinct but interrelated patterns of behaviour. Writers driven by a high nAch tend to set challenging goals, persist in the face of difficulty, and engage in systematic self-monitoring using metacognitive strategies such as planning, drafting, revising, and evaluating their work (Teng et al., 2022; Wang et al., 2025). High nPow is associated with wanting to make an impact and control over their learning environment. Thus, in the writing context, this translates into the deliberate use of cognitive strategies that allow them to manipulate language, organise arguments, and otherwise regulate effort to produce high quality output (Teng & Zhang, 2021). Writers with a high nAff, by contrast, are motivated by the desire to build and maintain relationships; they seek social validation through peer interaction, collaborative writing, and the use of feedback mechanisms (Chen et al., 2023). The integration of AI tools such as ChatGPT into this motivational framework is theoretically significant, as ChatGPT can serve simultaneously as a cognitive scaffold (supporting nPow through effort regulation), a metacognitive resource (supporting nAch through planning and revision assistance), and a social surrogate (partially addressing nAff through interactive dialogue and feedback) (Teng, 2025; Yan et al., 2024).

ChatGPT in Writing

The emergence of ChatGPT has prompted researchers in higher education around the world to attempt to understand both its potential and its limitations as a writing tool. As interest in the technology has grown, so

too has research examining how university student writers use ChatGPT and the extent to which it contributes to the writing process (Xiao et al., 2025). ChatGPT is essentially a generative pre-trained transformer that draws on large text corpora to generate contextually relevant output, flag grammar errors, recommend alternative vocabulary or write passages in conversations about writing (Brown et al., 2020; Ray, 2023). These capabilities are not trivial to student writers.

Evidence from a recent study suggests that the benefits of ChatGPT extend beyond text generation. Youssef et al. (2024) found that frequent use of ChatGPT among university students was associated with enhanced critical thinking, higher academic performance, and greater engagement with writing tasks. Interestingly, the most positive outcome was that students actively evaluated and questioned the responses generated by the tool rather than simply accepting it. Such students showed higher rates of independent inquiry and evaluative thinking skills suggesting that ChatGPT may be most effective as a resource for reflection and exploration rather than as a source to ready-made answers to something to be used (Youssef et al., 2024; Javier & Moorhouse, 2024).

For ESL learners, the role of ChatGPT may be particularly significant. These students are often required to learn the academic conventions while meeting the demand and challenges writing in their second language (Abd Hadi et al., 2024). In this context, ChatGPT appears to serve as a support writing tool by providing examples of grammatical structures, suggest contextually appropriate vocabulary, and help students to organise and expand their ideas (Mahapatra, 2024; Tlili et al., 2023). Nevertheless, the growing accessibility of AI-assisted writing tools raises important concerns. Several researchers point out that its usefulness does not automatically translate into good practice. Researchers such as Bai et al., (2023) and Lo et al., cautioned that students who rely heavily on AI-generated content may have treated the tool as a replacement for thinking rather than a scaffold for it. The excessive reliance of ChatGPT appears to hinder the development of independent thinking and problem-solving skills among the student writers. Therefore, understanding how Malaysian ESL students are incorporating the use of ChatGPT into their writing is crucial. The question of how Malaysian ESL students are either effectively using the tool or just outsourcing work to it is important with pedagogical and ethical implications, in which the study addresses through a motivation perspective.

Past Studies

Writing Motivation and ChatGPT

Many studies have been conducted to investigate the relationship between writing motivation, writing strategies, and the increasing use of digital tools among second language learners. As AI-powered tools become more common in educational settings, understanding how these factors interact is important. Several studies provide valuable insights to the theoretical and empirical concerns of this investigation.

Raoofi et al. (2017) conducted an important study on the writing strategies used by the undergraduate ESL students, with the specific aim of developing and validating a comprehensive writing strategy scale. Their research involved 315 undergraduate students enrolled in an English-medium program at a Malaysian public university and led to the development and validation of a comprehensive writing strategy scale. Using a Likert-scale survey, the study assessed five categories of writing strategies namely metacognitive, cognitive, effort regulation, social, and affective. The findings showed that metacognitive strategies were used frequently, indicating that students often engaged in planning, monitoring, and evaluating their writing, followed by cognitive and effort regulation strategies. In contrast, social and affective strategies appeared less prominent in students' writing practices. These findings suggest that these aspects of writing behaviour may receive less attention in formal academic writing instruction. Similar observations have been reported in more recent studies arguing that successful writing involves not only technical skills but also motivational, emotional and social aspects (Teng et al., 2022; Teng & Zhang, 2021). Consequently, writing instruction may benefit from a broader approach that recognizes these overlooked aspects of the writing process (Russell, 2023).

The study by Youssef et al. (2024) investigated how ChatGPT use relates to academic learning and achievement among 210 university students in Ajman, UAE. Through a quantitative survey design, they

explored five dimensions of ChatGPT's educational impact: critical thinking abilities, academic achievement, ChatGPT usage patterns, student engagement, and overall learning outcomes. Their findings revealed a positive relationship between active ChatGPT usage and critical thinking development and academic achievement. Students reported that the process of evaluating and questioning the responses by ChatGPT stimulated their analytical skills. These findings highlight the need for educators to encourage and guide their students to engage thoughtfully with AI-generated responses such as ChatGPT, rather than relying on them uncritically (Youssef et al., 2024; Javier & Moorhouse, 2024).

The existing body of literature confirms that writing is a complex process shaped by motivation and strategy used (Teng & Zhang, 2021; Russell, 2023). They also suggest that the growing use of AI as writing tools does not reduce the importance of motivational factors, instead, it amplifies them (Annamalai et al., 2024; Zare et al., 2025). Students who possess strong motivational drives are more likely to use ChatGPT in ways that support their learning and writing development rather than replacing their own effort and thinking (Mahapatra, 2024; Teng, 2025). Building on these insights, the present study examines how McClelland's (1965) motivational needs relate to writing strategies, and ChatGPT engagement within a single empirical framework.

Conceptual Framework of the Study

Figure 1 presents the conceptual framework of the study. Academic writing is a complex process. Successful writers use writing strategies (Khairuddin et.al., 2021) throughout the writing process. Among some successful writing strategies are metacognition, effort regulation, cognitive, social, and affective (Raoofi, et.al (2017). Strategies such as cognition and metacognition (Rahmat, 2020) help writers to feel they have power over their writing, and this gives them the confidence to achieve success in the writing task.

The concept of this study is anchored on McClelland's (1965) Motivation theory. According to him, learners are pushed by their motivation. This motivation is fueled by their needs: Need for Achievement (nAch), Need for Power (nPow), and Need for Affiliation (nAff). The need for achievement is the internal drive that pushes people to be better, to excel, and this is done through metacognition. The need for power pushes people to use their thinking and problem-solving skills to attain power. This is achieved through cognition. The last need by Clelland (1965) is the need for affiliation, which is the desire to be liked and accepted by others.



Figure 1- Conceptual Framework of the Study

ChatGPT and Needs of Writers

The growing popularity of ChatGPT has created opportunities for novice writers in many ways, particularly in academic settings. For instance, Youssef, et.al (2024), found that students who used ChatGPT reported improvements in critical thinking, academic performance and their overall sense of achievement. Drawing on this perspective, the present study adopts McClelland's (1965) to examine the motivational factors that may support the need for the student writers to use ChatGPT (Figure 1).

METHODOLOGY

This quantitative study is done to explore the needs of writers. A convenient sample of 150 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted in McClelland (1979), Raoofi, et.al (2017) & Youssef, et.al (2024) to reveal the variables in table 3 below. Table 1 below shows the categories used for the Likert scale; 1 is for Strongly Disagree, 2 is for Disagree, 3 is for Undecided, 4 is for Agree and 5 is for Strongly Agree.

Table 1- Likert Scale Used in the Instrument

1	Never
2	rarely
3	Sometimes
4	Often
5	Always

Table 2 - Distribution of Items in the Survey

SECTION	VARIABLE	CONSTRUCT	NO OF ITEMS		CA
A	NEED FOR POWER	Effort Regulation	4	10	.836
		Cognitive	6		
	NEED FOR AFFILIATION	Social	4	7	.804
		Affective	3		
B	NEED FOR ACHIEVEMENT	Metacognitive	10	26	.920
	(CHAT GPT)	Critical thinking abilities	4		
		Academic achievement	4		
		ChatGPT usage	5		
		Student engagement	3		
				43	.940

Table 2 shows the distribution of items in the survey instrument. The questionnaire consisted of 43 items divided into two sections. Section A measured respondents' need for power and need for affiliation through writing strategies adapted from Raoofi et al. (2017). The need for power construct comprised 10 items covering effort regulation (4 items) and cognitive strategies (6 items), while the need for affiliation construct consisted of 7 items measuring social (4 items) and affective strategies (3 items). The Cronbach's alpha values for these constructs were .836 and .804 respectively. Section B focused on the need for achievement in relation to ChatGPT use. This section contained 26 items adapted from Youssef et al. (2024) and measured five constructs: metacognitive strategies (10 items), critical thinking abilities (4 items), academic achievement (4 items), Chat GPT usage (5 items), and student engagement (3 items). The reliability coefficient for this section was .920. Overall, the instrument demonstrated excellent reliability, with an overall Cronbach's alpha value of .940, indicating that the survey items were suitable for measuring the intended constructs.

Table 3 - Reliability Levels, Cronbach's Alpha Ranges, and Their Interpretations

Reliability Level	Cronbach's Alpha range	Interpretation
Excellent	0.9 and above	Indicates very high internal consistency
Good	0.80-0.89	Reflects strong internal consistency

Acceptable	0.70-0.79	Indicates acceptable internal consistency
Questionable	0.60-0.69	Reflects questionable internal consistency
Poor	Below 0.6	Indicates poor internal consistency

Table 3 presents the reliability levels and interpretations of Cronbach's alpha values adapted from Ahmad et. al (2014). Cronbach's alpha was used to assess internal consistency of the survey instrument and determine the reliability of the items used in this study. As presented in Table 2, the overall Cronbach's alpha value of the instrument was .940. Based on the reliability scale presented in Table 2, this value falls within the "Excellent" category, indicating a very high level of internal consistency among the survey items. This suggests that the instrument was reliable for measuring the intended constructs.

FINDINGS

Demographic Analysis

According to Zienefuss, et al. (2021), researchers report demographic data in percentages to establish sample representatives and allow for generalizability to a larger population. The reporting also provides an overview of participants' characteristics. Percentages offer a clear and understandable picture of the sample makeup.

Table 4 – Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male (50)	29%
		Female (100)	71%
2	Discipline	Science & Technology (48)	29%
		Social Sciences & Humanities (102)	71%

Table 4 presents the demographic profile of the respondents who participated in the study. A total of 150 students completed the survey. In terms of gender, most of the respondents were female 71% (n=100), while male respondents represented 29% (n=50). With regard to academic discipline, most respondents were from the Social Sciences and Humanities field, comprising 71% (n=201) of the sample, 29% (n=48) were from the Science and Technology discipline. The distribution indicates that the study involved students from different academic backgrounds, providing a broader perspective on their writing strategies, motivational needs and ChatGPT usage.

Inferential Statistics

According to Shah (2024), there are three main functions of a T-test. Firstly, T-tests are done to compare means. This test is also done to determine if the average scores (mean) or values of two groups, or one group against a known value, are different enough to be considered statistically meaningful and are not just due to random chance. Secondly, a T-test is done to test hypotheses. Researchers use t-tests to test hypotheses about means, such as whether a new treatment significantly impacts a variable or if there's a difference in performance between two distinct groups. Lastly, the t-test is used to identify significant differences. The output of a t-test provides a p-value (significance value). If this p-value is below a predetermined threshold (often 0.05), it indicates a statistically significant difference, allowing researchers to draw conclusions about the populations from which their samples were drawn.

Findings for Gender

This section presents data to answer research question 1: Is there a significant relationship between writers' needs across gender?

H₀₁: There is no significant relationship between writers' needs across gender.

Table 5: T-Test for Writers' Needs across Gender

Group Statistics					
	Q1GENDER	N	Mean	Std. Deviation	Std. Error Mean
ALL_NEEDS	MALE	50	4.0907	.45725	.06466
	FEMALE	124	3.8923	.39894	.03583

Independent Samples Test												
Levene's Test for Equality of Variances					t-test for Equality of Means							
					Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference			
					One-Sided p	Two-Sided p			Lower	Upper		
ALL_NEEDS	Equal variances assumed		1.553	.214	2.844	172	.003	.005	.19835	.06975	.06067	.33603
	Equal variances not assumed				2.683	80.669	.004	.009	.19835	.07393	.05125	.34545

A two-sample t-test was performed to investigate whether there is a significant relationship for writers' needs across gender. Results show that there is a significant difference in the needs of writers across gender ($p=0.005$). Null hypothesis is rejected for H₀₁.

Findings for Discipline

This section presents data to answer research question 2: Is there a significant relationship between writers' needs across disciplines?

H₀₂: There is no significant relationship between writers' needs and disciplines

Table 6: T-Test for Writers' Needs across Disciplines

Group Statistics					
	Q2DIS	N	Mean	Std. Deviation	Std. Error Mean
ALL_NEEDS	ST	50	4.0367	.51968	.07349
	SS,H & B	124	3.9141	.37669	.03383

Independent Samples Test											
Levene's Test for Equality of Variances					t-test for Equality of Means						
					Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
					One-Sided p	Two-Sided p			Lower	Upper	
ALL_NEEDS	Equal variances assumed	10.404	.002	1.733	172	.042	.085	.12264	.07076	-.01703	.26231
	Equal variances not assumed			1.516	70.697	.067	.134	.12264	.08090	-.03869	.28397

A two-sample t-test was performed to investigate whether there is a significant relationship for writers' needs across gender. Results show that there is a significant difference in the needs of writers across gender ($p=0.085$). Null hypothesis is accepted for H_{02} .

Descriptive Statistics

Why is there a need to report the mean and standard deviation? According to Vetter (2017), Mean (M) represents the average, or centre of a data set. Standard deviation (SD) indicates the typical distance of individual observations from the mean which shows the data's variability or spread. A low SD means the data points are clustered close to the mean while a high SD indicates they are more spread out. It is good to have a high SD.

Findings for Need for Power

This section presents data to answer the research question 1: How do learners perceive the need for power in writing? In the context of this study, this is measured by effort regulation and cognitive strategies.

(i) Table 7 - Mean (M) and Standard Deviation (SD) for Effort Regulation (ERS)

Item	M	SD
ERSQ1 I write a lot to develop my writing skills.	3.47	0.83
ERSQ2 I often work hard to do well in my writing even if I don't like English writing tasks.	3.95	0.81
ERSQ3 Even if the writing activities are difficult, I don't give up but try to engage in them.	4.16	0.67
ERSQ4 I concentrate as hard as I can when doing a writing task.	4.18	0.68

Table 7 presents the findings for effort regulation. The highest mean score was recorded for the item related to concentrating fully during writing tasks ($M=4.18$, $SD=0.68$), followed closely by perseverance when facing difficult writing activities ($M=4.16$, $SD=0.67$). The lowest mean score was for writing extensively to improve writing skills ($M=3.47$, $SD=0.83$). Overall, the findings suggest that students demonstrated a high level of effort regulation in their writing.

(i) Table 8 - Mean (M) and Standard Deviation (SD) for Cognitive (CWS)

Item	M	SD
CWSQ1 I use memorized grammatical elements such as singular and plural forms, verb tenses, prefixes and suffixes, etc., in my writing	3.93	0.80
CWSQ2 I put newly memorized vocabulary in my sentences.	3.80	0.89
CWSQ3 In order to generate ideas for my writing, I usually engage myself in brainstorming.	4.05	0.75
CWSQ4 I use different words that have the same meaning.	4.02	0.77
CWSQ5 I use my experiences and knowledge in my writing.	4.26	0.64
CWSQ6 I try to use effective linking words to ensure clear and logical relationship between sentences or paragraphs	4.18	0.69

Table 8 shows the findings for cognitive writing strategies. The highest mean score was obtained for using personal experiences and knowledge in writing ($M=4.26$, $SD=0.64$), while the lowest mean score was recorded

focusing newly learned vocabulary in sentences ($M=3.80$, $SD=0.89$). Overall, the results indicate that students employed cognitive strategies to generate ideas, organize information, and support their writing process.

Findings for Need for Affiliation

This section presents data to answer the research question 2: How do learners perceive the need for affiliation in writing? In the context of this study, this is measured by social and affective strategies.

(i) Table 9 - Mean (M) and Standard Deviation (SD) for Social (SWS)

Item	M	SD
SWSQ1 In order to generate ideas for my writing, I usually discuss the writing topic with a friend or classmate.	3.87	0.87
SWSQ2 After revising and editing my essay thoroughly, I ask a friend or my classmate to read and comment on it.	3.70	0.97
SWSQ3 I try to identify friends or classmates whom I can ask for help in my writing.	3.94	0.85
SWSQ4 When I have trouble writing my essay, I try to do it with my classmates or friends.	3.81	0.91

Table 9 presents the findings for social strategies. The highest mean score was recorded for identifying friends or classmates who could assist with writing tasks ($M=3.94$, $SD=0.85$), while the lowest mean score was related to seeking feedback after revising an essay ($M=3.70$, $SD=0.97$). Overall, the results suggest that students moderately relied on their peers for support throughout the writing process.

(ii) Table 10 - Mean (M) and Standard Deviation (SD) for Affective (AWS)

Item	M	SD
AWSQ1 I try to write an essay in class with confidence and ease	3.75	0.75
AWSQ2 I try to relax whenever I feel afraid of writing.	3.91	0.76
AWSQ3 I encourage myself to write even when I am afraid of making mistakes	4.01	0.73

Table 10 presents the findings for affective strategies. The highest mean score was recorded for encouraging oneself to write despite being afraid of making mistakes ($M=4.01$, $SD=0.73$), while the lowest mean score was for writing an essay with confidence and ease in class ($M=3.75$, $SD=0.75$). Overall, the findings suggest that students demonstrated positive affective strategies when engaging in writing tasks.

Findings for Achievement

This section presents data to answer the research question 3: How do learners perceive the need for achievement in writing? In the context of this study, this is measured by metacognitive strategies and use of ChatGPT.

(ii) Table 11 - Mean (M) and Standard Deviation (SD) for Metacognitive (MWS)

Item	M	SD
MWSQ1 I organize my ideas prior to writing.	4.04	0.72

MWSQ2 I revise my writing to make sure that it includes everything I want to discuss in my writing.	4.27	0.68
MWSQ3 I check my spelling.	4.40	0.75
MWSQ4 I check my writing to make sure it is grammatically correct.	4.40	0.68
MWSQ5 I evaluate and re-evaluate the ideas in my essay.	4.16	0.69
MWSQ6 I monitor and evaluate my progress in writing.	4.00	0.74
MWSQ7 I revise and edit an essay two or more times before I hand it in to my teacher.	4.11	0.77
MWSQ8 I go through the planning stages in my writing.	3.99	0.81
MWSQ9 I go through the drafting stages in my writing.	4.07	0.83
MWSQ10 I go through the revising and editing stages in my writing.	4.13	0.73

Table 11 presents the findings for metacognitive strategies. The highest mean scores were recorded for checking writing to ensure grammatical accuracy ($M=4.40$, $SD=0.68$) and checking spelling ($M=4.40$, $SD=0.75$). In contrast, the lowest mean score was found for going through the planning stages of writing ($M=3.99$, $SD=0.81$). Overall, the results indicate that respondents frequently employed metacognitive strategies, particularly in monitoring and evaluating their writing throughout the writing process.

(i) Table 12 - Mean (M) and Standard Deviation (SD) for Critical Thinking Abilities (CT)

Item	M	SD
CTQ1 I usually need clarification on the precision and reliability of information provided by ChatGPT, which enhances my critical thinking skills.	3.99	0.71
CTQ2 ChatGPT's responses made me doubt their validity, leading me to seek further clarification or evidence.	4.09	0.73
CTQ3 I actively explore alternative viewpoints or sources of information when using ChatGPT to ensure a comprehensive understanding of the topic.	4.09	0.69
CTQ4 I need clarification about the accuracy of ChatGPT's output, which often encourages me to evaluate the information and conduct additional research independently.	4.14	0.70

Table 12 presents the findings for critical thinking abilities. The highest mean score was recorded for seeking clarification about the accuracy of ChatGPT's output and conducting additional research independently ($M=4.14$, $SD=0.70$). Meanwhile, the lowest mean's score was related to seeking clarification on the reliability of information provided by ChatGPT ($M=3.99$, $SD=0.71$). Overall, the findings suggest that students demonstrated a high level of critical thinking when evaluating and verifying information generated by ChatGPT.

(ii) Table 13 - Mean (M) and Standard Deviation (SD) for Academic Achievement (AA)

Item	M	SD
AAQ1 I actively explore alternative viewpoints or sources of information when using	4.10	0.70

ChatGPT to ensure a comprehensive understanding of the topic.		
AAQ2 ChatGPT brings innovative ideas that are ready to be shared with students.	3.86	0.80
AAQ3 Students can anticipate robust writing guidance from ChatGPT.	3.66	0.83
AAQ4 ChatGPT has improved my academic performance.	4.13	0.73

Table 13 presents the findings for academic achievement. The highest mean score was recorded for the item that ChatGPT has improved academic performance ($M=4.13$, $SD=0.73$), while the lowest mean score was related to students anticipating writing guidance from ChatGPT ($M=3.66$, $SD=0.83$). Overall, the findings suggest that students perceived ChatGPT as having a positive influence on their academic achievement and writing practices.

(iii) Table 14 - Mean (M) and Standard Deviation (SD) for ChatGPT Usage (CU)

ITEM	M	SD
CUQ1 ChatGPT is a state-of-the-art writing model that is favorably used today.	3.69	0.94
CUQ2 Students seek help from ChatGPT's assistance in composing essays and articles.	3.91	0.75
CUQ3 ChatGPT helps students in English language translation.	3.82	0.87
CUQ4 Employing ChatGPT significantly improves human productivity.	3.44	0.99
CUQ5 The advent of ChatGPT marks a groundbreaking transformation in Natural Language Processing capabilities.	3.68	0.85

Table 14 shows the findings for ChatGPT usage. The highest mean score was obtained for seeking assistance from ChatGPT when composing essays and articles ($M=3.91$, $SD=0.75$), whereas the lowest mean score was recorded for the statement that ChatGPT significantly improves human productivity ($M=3.44$, $SD=0.99$). Overall, the results indicate that respondents frequently used ChatGPT as a support tool for academic writing and language-related tasks.

(iv) Table 15 - Mean (M) and Standard Deviation (SD) for Student Engagement (SE)

ITEM	M	SD
SEQ1 ChatGPT is more interactive, human-like, and engaging for the students.	3.41	1.05
SEQ2 ChatGPT increases confidence in my ability to conduct research/to search for materials	3.46	10.3
SEQ3 ChatGPT is easy to use and more engaging for me	3.78	0.92

Table 15 presents the findings for student engagement. The highest mean score was recorded for the statement that ChatGPT is easy to use and engaging ($M=3.78$, $SD=0.92$), while the lowest mean score was related to ChatGPT being interactive and human-like ($M=3.41$, $SD=1.05$). Overall, the findings suggest that students demonstrated a moderate level of engagement when using ChatGPT for learning and writing practices.

Exploratory Statistics

According to He (2024), correlation is a statistical technique that shows how strongly two variables are related to each other or the degree of association between the two. It's a common tool for describing simple relationships without making a statement about cause and effect. This section presents data to answer the research question on correlation.

Table 16- Correlation between Social Support and Expectancy Components

		Need for Power	Need for Affiliation
Needs for Achievement	Pearson (Correlation	.602**	.568**
	Sig (2-tailed)	<.000	<.000
	N	150	150

**Correlation is significant at the 0.01 level (2-tailed)

Findings for the Relationship between need for achievement and need for power.

This section presents data to answer the research question 4: Is there a significant relationship between achievement and power in writing?

H₀₃ There is no significant relationship between achievement and power in writing.

With reference to Table 16, there is a significant relationship between need for achievement and need for power. Results show there is a strong, significant association between need for achievement and need for power. This means the null hypothesis for H₃ is rejected.

Findings for need for achievement and affiliation in writing

This section presents data to answer the research question 5: Is there a significant relationship between need for achievement and affiliation in writing?

H₀₂: There is no significant relationship between need for achievement and affiliation writing.

With reference to Table 16, there is a significant relationship between need for achievement and need for power. Table 16 also shows that there is a significant relationship between need for achievement and need for affiliation. Results show there is a strong, significant association between need for achievement and need for affiliation. This means the null hypothesis for H₀₄ is rejected.

CONCLUSION

Summary of Findings and Discussions

This study explored university students' writing strategies and their use of ChatGPT through McClelland's (1965) Theory of Needs. The findings revealed a significant difference in writers' needs across gender, suggesting that male and female students may differ in their motivational orientations towards writing. However, no significant difference was found across academic disciplines, indicating that students from different fields shared similar writing needs and perceptions of ChatGPT.

In terms of the need for power, students demonstrated high levels of effort regulation and cognitive strategy use. They remained focused on writing tasks, persevered through challenges, and frequently drew on their

experiences and knowledge when writing. These findings support Raoofi et al. (2017), who reported that successful writers actively employ cognitive and self-regulatory strategies.

For the need for affiliation, students moderately relied on peers for support while also demonstrating positive affective behaviours when writing. This finding is consistent with Chen et al. (2023), who emphasised the role of social interaction and emotional support in writing development.

Regarding the need for achievement, students reported frequent use of metacognitive strategies and demonstrated critical engagement with ChatGPT. They perceived the tool as beneficial for their academic performance and writing development. This finding supports Youssef et al. (2024), who found that ChatGPT can enhance critical thinking, academic achievement, and student engagement.

Finally, significant positive relationships were found between achievement and power, as well as achievement and affiliation. These findings support McClelland's (1965) theory that motivational needs are interconnected and collectively influence behaviour. Overall, the study suggests that ChatGPT functions best as a supportive learning tool, while students' motivation and writing strategies remain central to effective writing practices.

Implications and Suggestions for Future Research

Theoretical and Conceptual Implications

One interesting outcome of this study is the way the three motivational needs appeared to work together rather than independently. Students who reported higher levels of achievement-oriented behaviours also tended to demonstrate stronger power- and affiliation-related tendencies. This pattern lends support to McClelland's (1965) proposition that human behaviour is influenced by multiple needs operating simultaneously. In the context of writing, the findings suggest that motivation, writing strategies, and ChatGPT use are closely connected and should not be examined as separate constructs.

Pedagogical Implications

The results indicate that students do not appear to rely on ChatGPT solely for producing content. Instead, many students reported using the tool alongside metacognitive and critical thinking strategies. This highlights the importance of guiding students to engage with AI tools thoughtfully and responsibly. Writing teachers may therefore consider integrating ChatGPT into classroom activities that emphasise planning, revision, reflection, and evaluation rather than focusing only on the final written product.

Suggestions for Future Research

The present study was limited to undergraduate students from a single institution. Future research could examine whether similar patterns emerge among learners from different universities or educational levels. It may also be worthwhile to explore students' experiences through interviews or focus group discussions, as such approaches could provide a richer understanding of how motivational needs influence the use of ChatGPT during the writing process.

REFERENCES

1. Abd Hadi, N. A., Mohamad, F., Md Johar, E., & Abdul Kadir, Z. (2024). Exploring the acceptance of ChatGPT as an assisting tool in academic writing among ESL undergraduate students. *International Journal of Research and Innovation in Social Science*, 8(10), 2886–2901.
2. Ahmad, N., Alias, F.A., Hamat, M., & Mohamed, S.A. (2024) Reliability Analysis: Application of Cronbach's Alpha in Research Instruments. SIG: e-Learning@CS, 114-119. <https://appspenang.uitm.edu.my/sigcs/>
3. Bai, X., et al. (2023). Reasoning ability, academic performance, and ChatGPT. *arXiv*. <https://doi.org/10.48550/arXiv.2304.11842>

4. Barrot, J. S. (2023). Using ChatGPT for second language writing: Pitfalls and potentials. *Assessing Writing*, 57, Article 100745. <https://doi.org/10.1016/j.asw.2023.100745>
5. Brown, T. B., et al. (2020). Language models are few-shot learners. *Advances in Neural Information Processing Systems*, 33, 1877–1901.
6. Chen, W., Liu, D., & Lin, C. (2023). Collaborative peer feedback in L2 writing: Affective, behavioral, cognitive, and social engagement. *Frontiers in Psychology*, 14, 1078141. <https://doi.org/10.3389/fpsyg.2023.1078141>
7. He, L. (2024) The Application of SPSS Correlation Analysis in the Study of Precision Teaching of English in Universities. *Applied Mathematics and Nonlinear Science*, 9(1), 1-13. <http://dx.doi.org/10.2478/amns-2024-1371>
8. Hickman, T. M., & Stoica, M. (2025). ChatGPT in class: Motivation, schadenfreude and student usage intentions. *Young Consumers*, 26(2), 296–. <https://doi.org/10.1108/YC-09-2024-2252>
9. Javier, D. R. C., & Moorhouse, B. L. (2024). Developing secondary school English language learners' productive and critical use of ChatGPT. *TESOL Journal*, 15(1). <https://doi.org/10.1002/tesj.755>
10. Khairuddin, Z, Rahmat, N.H., Noor, M.M., & Khairuddin, Z. (2021) The Use of Rhetorical Strategies in Argumentative Essays. *Pertanika Journal of Social Sciences & Humanities*, 29(S3), 263-285). <https://doi.org/10.47836/pjssh.29.S3.14>
11. Lo, C. K., et al. (2024). Systematic review of ChatGPT in higher education. *Social Sciences & Humanities Open*, 12, 101049. <https://doi.org/10.1016/j.ssaho.2025.101049>
12. Mahapatra, S. (2024). Impact of ChatGPT on ESL students' academic writing skills: A mixed methods intervention study. *Smart Learning Environments*, 11(1). <https://doi.org/10.1186/s40561-024-00295-9>
13. McClelland, D. C. (1965). Toward a theory of motive acquisition. *American Psychologist*, 20(5), 321–333. <https://doi.org/10.1037/h0022225>
14. Persson, J., et al. (2025). Chatbots and student motivation: A scoping review. *International Journal of Educational Technology in Higher Education*, 22, Article 28. <https://doi.org/10.1186/s41239-025-00524-2>
15. Rahmat, N. H. (2021) An Investigative Study of Cognitive and Metacognitive Paraphrasing Strategies in ESL Writing. *International Journal of Academic Research in Business & Social Sciences*, 11(3), 76-87. <http://dx.doi.org/10.6007/IJARBS/v11-i3/8919>
16. Raoofi, S. Miri, A., Gharibi, J. & Malaki, B. (2017). Assessing and Validating a Writing Strategy Scale for Undergraduate Students. *Journal of Language Teaching and Research*, Vol 8(3), pp 624-633. Retrieved from <http://www.academypublication.com/issues2/jltr/vol08/03/23.pdf>
17. Ray, P. P. (2023). ChatGPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope. *Internet of Things and Cyber-Physical Systems*, 3, 121–154. <https://doi.org/10.1016/j.iotcps.2023.04.003>
18. Russell, D. R. (2023). Motivation and genre as social action: A phenomenological perspective on academic writing. *Frontiers in Psychology*, 14, 1226571. <https://doi.org/10.3389/fpsyg.2023.1226571>
19. Shah, M.A.(2024). **Meaning and Statistical Analysis** of T-Tests in SPSS. *Journal of Saidu Medical College*, 14(1), 64–65. <https://doi.org/10.52206>
20. Teng, M. F., Qin, C., & Wang, C. (2022). Assessing self-regulatory writing strategies and their predictive effects on young EFL learners' writing performance. *Assessing Writing*, 51, 100573. <https://doi.org/10.1016/j.asw.2021.100573>
21. Teng, L. S., Wei, L., & Zhang, L. J. (2024). Longitudinal interactions of L2 learners' motivations and strategic behavior in strategies-based writing instruction. *AILA Review*. <https://doi.org/10.1075/aila.24026.ten>
22. Tlili, A., et al. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. *Smart Learning Environments*, 10(15). <https://doi.org/10.1186/s40561-023-00237-x>
23. Vetter, T.R. (2017) Descriptive Statistics: Reporting the Answers to the 5 Basic Questions of Who, What, Why, When, Where, and a Sixth, So What? *Anesth Analg*, 125(5), 1797-1802. <https://doi.org/10.1213/ane.0000000000002471>
24. Wang, H., Hussin, S., & Aziz, A. A. (2025). Investigating the relationship between self-regulated writing strategies and writing performance. *Arab World English Journal*, 16(3).

25. Xiao, F., Zhu, S., & Xin, W. (2025). Exploring the landscape of generative AI (ChatGPT)-powered writing instruction in EFL education: A scoping review. *ECNU Review of Education*. <https://doi.org/10.1177/20965311241310881>
26. Youssef,E., Medhat,M., Abdellatif,S., & Al Malek,M. (2024) Examining the effect of ChatGPT usage on students' academic learning and achievement: A survey-based study in Ajman,UAE. *Computers and Education: Artificial Intelligence*, 7(Dec 2024), 100316. <https://doi.org/10.1016/j.caeai.2024.100316>
27. Zare, J., Al-Issa, A., & Ranjbaran Madiseh, F. (2025). Interacting with ChatGPT in essay writing: A study of L2 learners' task motivation. *ReCALL*, 37(3), 385–402. <https://doi.org/10.1017/S0958344025000035>
28. Ziegenfuss, J. Y., Casey A. E., Jennifer M. D., Meghan M. J., Thomas E. K., and Marna, C. (202) Impact of Demographic Survey Questions on Response Rate and Measurement: A Randomized Experiment. *Survey Practice* 14 (1), <https://doi.org/10.29115/SP-2021-0010>.
29. Zogheib, B., & Daniela, L. (2024). Understanding university students' adoption of ChatGPT. *Journal of Information Technology Education: Research*, 23, Article 025. <https://www.jite.org/documents/Vol23/JITE-Rv23Art025Zogheib10712.pdf>

APPENDIX

Writing Strategies & Chat Gpt

(This instrument is adapted from Raoofi, et.al, 2017 & Youssef, et.al, 2024)

SECTION	VARIABLE	CONSTRUCT	NO OF ITEMS	
A	NEED FOR POWER	Effort Regulation	4	10
		Cognitive	6	
	NEED FOR AFFILIATION	Social	4	7
		Affective	3	
B	NEED FOR ACHIEVEMENT	Metacognitive	10	26
	(CHAT GPT)	Critical thinking abilities	4	
		Academic achievement	4	
		ChatGPT usage	5	
		Student engagement	3	
				43

Section A -Writing Strategies

(i) METACOGNITIVE (MWS)

ITEM	1	2	3	4	5
MWSQ 1 I organize my ideas prior to writing.					
MWSQ 2 I revise my writing to make sure that it includes everything I want to discuss in my writing.					

MWSQ 3 I check my spelling.					
MWSQ 4 I check my writing to make sure it is grammatically correct.					
MWSQ 5 I evaluate and re-evaluate the ideas in my essay.					
MWSQ 6 I monitor and evaluate my progress in writing.					
MWSQ 7 I revise and edit an essay two or more times before I hand it in to my teacher.					
MWSQ8 I go through the planning stages in my writing.					
MWSQ9 I go through the drafting stages in my writing.					
MWSQ10 I go through the revising and editing stages in my writing.					

(ii) Effort Regulation (ERS)

ITEM	1	2	3	4	5
ERSQ 1I write a lot to develop my writing skills.					
ERSQ 2I often work hard to do well in my writing even if I don't like English writing tasks.					
ERSQ 3Even if the writing activities are difficult, I don't give up but try to engage in them.					
ERSQ 4I concentrate as hard as I can when doing a writing task.					
ERSQ I spend a lot of time and energy on writing good English assignments.					

(iii) Cognitive (Cws)

ITEM	1	2	3	4	5
CWSQ1 I use memorized grammatical elements such as singular and plural forms, verb tenses, prefixes and suffixes, etc, in my writing					
CWSQ 2I put newly memorized vocabulary in my sentences.					
CWSQ 3In order to generate ideas for my writing, I usually engage myself in brainstorming.					
CWSQ 4I use different words that have the same meaning.					
CWSQ 5I use my experiences and knowledge in my writing.					
CWSQ 6I try to use effective linking words to ensure clear and logical relationship between sentences or paragraphs					

Part 5-Social (Sws)

ITEM	1	2	3	4	5
SWSQ1 In order to generate ideas for my writing, I usually discuss the writing topic with a friend or classmate.					

SWSQ 2 After revising and editing my essay thoroughly, I ask a friend or my classmate to read and comment on it.					
SWSQ 3 I try to identify friends or classmates whom I can ask for help in my writing.					
SWSQ 4 When I have trouble writing my essay, I try to do it with my classmates or friends.					

Part 6-Affective (Aws)

ITEM	1	2	3	4	5
AWSQ1 I try to write an essay in class with confidence and ease					
AWSQ2 I try to relax whenever I feel afraid of writing.					
AWSQ3 I encourage myself to write even when I am afraid of making mistakes					

Section B-Chatgpt

(iv) Critical Thinking Abilities (Ct)

ITEM	1	2	3	4	5
CTQ1 I usually need clarification on the precision and reliability of information provided by ChatGPT, which enhances my critical thinking skills.					
CTQ2 ChatGPT's responses made me doubt their validity, leading me to seek further clarification or evidence.					
CTQ3 I actively explore alternative viewpoints or sources of information when using ChatGPT to ensure a comprehensive understanding of the topic.					
CTQ4 I need clarification about the accuracy of ChatGPT's output, which often encourages me to evaluate the information and conduct additional research independently.					

(v) Academic Achievements (AA)

ITEM	1	2	3	4	5
AAQ1 I actively explore alternative viewpoints or sources of information when using ChatGPT to ensure a comprehensive understanding of the topic.					
AAQ2 ChatGPT brings innovative ideas that are ready to be shared with students.					
AAQ3 Students can anticipate robust writing guidance from ChatGPT.					
AAQ4 ChatGPT has improved my academic performance.					

(vi) Chatgpt Usgae (CU)

ITEM	1	2	3	4	5
CUQ1 ChatGPT is a state-of-the-art writing model that is favorably used today.					

CUQ2 Students seek help from ChatGPT's assistance in composing essays and articles.					
CUQ3 ChatGPT helps students in English language translation.					
CUQ4 Employing ChatGPT significantly improves human productivity.					
CUQ5 The advent of ChatGPT marks a groundbreaking transformation in Natural Language Processing capabilities.					

(vii) Student Engagement (SE)

ITEM	1	2	3	4	5
SEQ1 ChatGPT is more interactive, human-like, and engaging for the students.					
SEQ2 ChatGPT increases confidence in my ability to conduct research/to search for materials					
SEQ3 ChatGPT is easy to use and more engaging for me					