



IMPACT OF SLEEP QUALITY AND STUDY TIME MANAGEMENT ON WRITING ABILITY IN IRAQI UNIVERSITY EFL STUDENTS

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ABSTRACT	KEYWORDS
<p>The present study was conducted with the aim of "measuring the impact of sleep quality and study time management on writing ability in Iraqi students." This is a descriptive-survey study of an applied type and is of a correlational type in terms of the relationships between variables. The statistical population of the study is all undergraduate students in the field of English language and English literature in Iraqi universities in the academic year 2024-2025, and research questionnaires were distributed among a sample of 220 people who were selected using the stratified sampling method and based on the suitability of the field and level of education. The data of this study were collected using standard questionnaires. The SmartPLS3 statistical software was also used for statistical analysis. According to the results obtained from the model fitting, sleep quality and appropriate study time management can have a positive and significant effect on improving the ability to write English as a second language in Iraqi students.</p>	<p>Sleep quality, Study time management, Writing performance, English language teaching.</p>

Introduction

In the last decade, the teaching of English as a foreign language in Iraqi universities has undergone extensive changes. These days, the ability to write academically in English is one of the main criteria for assessing students' success in language-related fields (Al-Shamarti, 2025). Writing in a second language requires deep linguistic comprehension, organized thinking, and focused attention to meaning and sentence structure. Many students from Iraq, despite having adequate reading and listening skills, face challenges in the production of text, which is, writing, such as lack of concentration, poor text coherence, and writing anxiety (Novita et al., 2024). These weaknesses are often rooted in psychological and behavioral factors, not simply in linguistic skills.

Sleep quality is one of the most important components that has been studied in studies in recent years. Liu (2024) has shown in this regard that good sleep quality can significantly help improve students' learning performance. Xu et al. (2025) showed in their study that the quality of students' sleep can significantly affect their participation in learning, that is, the better the quality of sleep, the greater the

participation in learning. A student who gets enough sleep will be able to absorb new information faster and review old knowledge more. Sufficient and quality sleep can also indirectly affect the writing performance of foreign language students, because writing continuous and meaningful sentences requires a high level of concentration and cognitive control. In fact, long-term sleep deprivation not only leads to mental fatigue the next day and difficulty concentrating, but also affects memory and learning efficiency and even causes behavioral disorders (Xu et al., 2025).

Along with adequate sleep quality, one of the most important key factors in learning English as a second language (ESL) is the ability to write in that language. Therefore, for a standardized English assessment, it is essential to assess the writing skills of learners. Given that this assessment also includes other linguistic information such as grammar, vocabulary, and conceptualization of ideas, it is very essential. In this regard, the results of the study by Ramadhani (2024) showed that allocating adequate time is an important factor in improving the performance of learners on a written test. When students have sufficient time to write, edit, and revise their text, their writings show higher quality in terms of coherence, lexical variety, and linguistic accuracy. Boraimo et al. (2024) are among other researchers who stated that regular planning can help students reduce exam anxiety and time pressure, so that students gain a greater ability to focus on the structure and meaning of texts. In fact, it seems that sleep and time are two essential components of regulating learning behaviors.

Novita et al. (2024) also pointed out the role of time management in increasing students' readiness for learning and improving their psychological state. According to them, time management and readiness for learning play pivotal and determining roles in students' readiness for learning, and time management showed a stronger effect on this readiness. Time management has become a major challenge for Iraqi students who usually face factors such as irregular class hours, intensive night studies, and social and academic pressures. Weakness in time management can reduce useful sleep hours and, as a result, reduce students' academic efficiency, which will also directly affect their writing performance.

Writing ability in English, contrary to the popular belief, is not only dependent on vocabulary and grammar knowledge; it is formed based on a set of cognitive, emotional, and behavioral abilities (Kim, 2025). If a student writes in a favorable physiological state and with a calm and alert mind, he or she can better organize ideas and construct more precise sentences. According to Huang et al. (2024), adequate sleep restores neural pathways related to memory and learning and helps the student to retrieve linguistic information more quickly when writing. On the other hand, according to the results of Ramadhani's (2024) research, effective time management has a direct impact on self-efficacy and mental discipline and allows the learner to follow his or her thought path with the least amount of confusion from the planning stage to the revision of the text. Thus, the relationship between these two variables can play a decisive role in the quality of writing.

According to the above, it can be seen that the research literature has widely emphasized the effect of sleep quality and study time management on academic performance and has addressed the issue that adequate sleep and specific time management can help improve writing skills in language learners. As studies conducted in Asian countries (Masnan et al., 2025, Novita et al., 2024) have also confirmed this issue. These researchers have pointed to the relationship between adequate sleep and feelings of psychological well-being with increased linguistic creativity and writing self-efficacy. However, the complex relationship between sleep quality, time management, and improved writing skills in language learners, especially among Iraqi second language learners, necessitates further research to clarify these

connections and develop interventions to improve writing skills. The existence of special conditions in Iraq, such as the existence of a traditional education system and the lack of students using English in conversational conversations, and as a result, high pressure on these individuals to learn, has led the researcher to address this issue in order to reduce the academic anxiety of language learners. The results of this study can reduce the gaps between physiological, behavioral, and cognitive language skills to some extent and show how the interaction between sleep quality and time management can act as a determining factor in improving concentration, reducing anxiety, and increasing self-efficacy, and provide the basis for developing writing skills and, consequently, improving the academic performance of these individuals.

Theoretical foundations and research background

Sleep Quality and its Interaction with Learning

Sleep quality is an important factor that affects health, well-being, and cognitive performance among different groups, as shown by research by Aydin and Aydin (2024), sleep quality can directly reduce cognitive engagement in the learning process. Although previous research has primarily examined the relationship between sleep quality and physical health outcomes, its impact on academic performance among language learners has not yet been fully explored. XU et al. (2025) examined the quality of sleep in students and found that insufficient sleep causes attention deficits, memory impairment, and ultimately impaired mental planning ability, all of which are essential for improving writing skills. According to these researchers, students who have good quality and regular sleep are mentally better prepared to process information, link ideas, and produce coherent writing.

Emerging studies in the field of second language learning have examined the interactions of sleep quality and the impact of this component on learners' academic performance. Specifically, the results of many studies have shown that sleep quality is a factor that not only affects the capacity to concentrate, but also indirectly increases the sense of mental control and reduces academic anxiety (Aydin & Aydin, 2024). These findings are also consistent with psychological perspectives, because when a person has enough sleep, the neural activities of the prefrontal cortex are regulated, and as a result, the level of thinking and language production in him will be coordinated (Zheng et al., 2024). According to the relevant evidence, sleep deprivation seems to be a cognitive barrier in causing impairment in writing skills and coherence in English language learners. In the field of educational psychology, Çali et al. (2024) emphasized adequate sleep as a factor in maintaining emotional balance in language learners and stated that sleep quality leads to empowerment of individuals against performance anxiety, especially in language skills such as conversation and writing that require high concentration and self-confidence. This result has been emphasized in studies such as (Sari & Han, 2024). In addition, Sari and Han added that physiological states (such as sleep and mental relaxation) in language performance have a wide importance in creating writing self-efficacy.

The Role of Study Time Management in Writing Skills

Proper time management, along with physiological factors such as adequate sleep, is another effective component of learning and improving students' language performance, which contributes significantly to the coherence of thoughts and cognitive processes when writing (Posey & Butler, 2024). In this context, Ramadhani (2024) noted that writing argumentative materials requires many skills, such as

cognitive skills, and students should learn these skills by spending appropriate time and studying more and acquire the ability to write structured and coherent texts.

Abdi Tabari (2024) also confirmed the previous findings and stated that giving language learners more time allows them to fully carry out cognitive processes such as organizing ideas, selecting words, and reviewing meaning, thus their writings benefit from a more accurate and natural semantic flow. These findings are consistent with the study of Ramadhani (2024). This researcher emphasized the teaching of time management in ESL writing classes because he considered time management a natural practice to improve writing skills among students. The study of Mardiana et al. (2023) also emphasized in this regard that students without time management experience anxiety and reduced intellectual coherence, while if they have the right time, they achieve more natural and coherent thinking and writing patterns with proper management. Study time management can be manifested as a self-regulatory behavior and lead to greater mastery of the learning process and reduced anxiety. The theoretical basis of this concept is related to the self-regulated learning perspective, which emphasizes the individual's ability to learn by planning, monitoring, and evaluating their own performance (Lourenço & Paiva, 2024).

Examining the relationship between research variables

The findings of studies conducted in recent years (Masnan et al, 2025, Xu et al, 2025, Ramadhani, 2024) point to the importance of mental and temporal coordination and improved learning. People who have sufficient and quality sleep and organize their time properly benefit from a calmer mind, a more active memory, and a more coherent neural network. As a result, their thoughts operate logically when writing and will provide a more coherent product. In contrast, lack of sleep or lack of proper planning causes cognitive dissonance and turns writing into a scattered and incoherent process. Accordingly, it can be said that sleep quality and time management are two complementary and interacting components that together improve writing ability. Sleep quality provides the psychological and physiological background necessary for concentration, and time management guides the behavioral path necessary to use that concentration in academic skills.

Materials and methods

The present study is a quantitative, descriptive-correlational study that aims to investigate the relationship between sleep quality, study time management, and writing ability among Iraqi English as a Foreign Language (EFL) students. Participants were selected using a stratified random sampling approach from 400 undergraduate students in English language and literature at Iraqi universities who had completed the academic writing unit in the last two semesters and were selected using the Morgan table. The study collected data from 220 students who were selected as a sample. Data collection was conducted as an online questionnaire and access was guaranteed for the participants.

Data were collected through two standardized questionnaires and a short written test.

1. Sleep Quality Questionnaire:

The modified version of the Pittsburgh Sleep Quality Index (PSQI) was used to measure sleep status during the past month. This instrument consists of 15 items and, although originally designed for the general population, can be used in educational research according to the recommendation of Xu et al. (2025). The subscales of sleep quality were three components: sleep duration, sleep efficiency, and sleep disturbance. The reliability of this questionnaire was measured in previous studies and estimated to be 0.81.

2. Study Time Management Questionnaire:

The Study Time Management Questionnaire is a 10-item instrument extracted from the studies of Masnan et al (2025) and Buraimo et al(2024). This questionnaire measures the level of planning, prioritizing, and time control in studying, and its reliability was reported to be 0.84 in the initial assessment.

3. Writing Performance Test:

To assess students' writing ability, the participants completed a short writing exercise of 200 to 250 words on a topic similar to that of the second part of the IELTS test. The results of this test were analyzed to measure coherence, grammatical accuracy, and vocabulary richness. The judgment was based on the New Jersey Holistic Scoring Rubric to reduce human error in the assessment.

In the present study, the data were first analyzed with SPSS version 25 for descriptive statistics (mean, standard deviation, frequency), and then the relationships between variables were tested with partial structural equation modeling (PLS-SEM) in SmartPLS 4 software.

Research Findings

In this research, data obtained from 220 Iraqi students studying English as a foreign language at various universities were analyzed. Of the participants, 58% were female and 42% were male, with an average age of 21.7 years. The sample was fairly evenly distributed across majors and levels, with most students in their second or third year of study. The initial results indicated that the level of sleep quality (SQ) among students was assessed as moderate to low. The mean value of the overall sleep quality index based on the Pittsburgh Sleep Quality Questionnaire (PSQI) score was 6.8, indicating that most respondents did not have a good sleep quality. The overall components of the index showed that the sleep duration component had an average of 1.6 hours per day and sleep efficiency was assessed as relatively low with an average of 78%. Also, about 45% of students stated that they had sleep disturbance such as waking up in the middle of the night or difficulty falling asleep at least three nights a week.

In the second part, the status of study time management (STM) was analyzed. The total mean of the time management questionnaire was 3.42 out of 5, indicating a fairly satisfactory level of study time control among students. The highest score was related to the subscale "long-term planning" (3.71) and the lowest was related to "regularity in implementing the daily schedule" (3.18). These findings indicate that although students have acceptable performance in setting academic goals and overall scheduling, they have difficulty in maintaining a stable study routine.

The results of the study of students' writing skills, with an average total score of 72.9 out of 100, showed that Iraqi students are relatively capable in writing skills. The highest average was for "text coherence and continuity" (average 3.8), followed by "grammatical accuracy" (3.56), and finally "vocabulary richness" (3.41).

The overall result of the data description shows that some students have relatively low levels of sleep and time management, and these weaknesses may have indirectly affected their writing performance. Overall, the data distribution pattern was normal in all three variables, and no outliers or abnormalities were observed.

After that, in the inferential part, the Kolmogorov-Smirnov test was performed to measure the data distribution pattern. The results of this study showed that the obtained values did not correspond to

the normal distribution, so the data were non-normal. Next, structural equation modeling and pls3 software were used.

The validity indicators of the model were evaluated at this stage. The results of composite reliability (CR) and average variance extracted (AVE) measures, which are given in Table 1, showed that the composite reliability was higher than 0.7 and the AVE value was higher than 0.5. The results of Cronbach's alpha also indicate adequate reliability.

Table 1. Results of Validity and Reliability Analysis of the Variables

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Sleep Quality	0.811	0.855	0.560
Study Time Management	0.808	0.855	0.506
Writing Ability	0.819	0.862	0.516

Examination of the model fit indices also indicated that the coefficient of determination (R^2) was within an acceptable range, and the model quality index (Q^2) of the constructs was reported to be more than 0.35, indicating the quality of the model fit. The goodness of fit (GOF) index values are also within a range that confirms the overall fit of the model. This result indicates that the conceptual model of the research has a good fit with the real data and the relationships between "sleep quality", "study time management" and "writing ability" are reflected in the model in a consistent and meaningful way. In general, the above set of statistical indicators confirms the validity of the proposed structural model and shows that the model is adequate for path analysis and hypothesis testing.

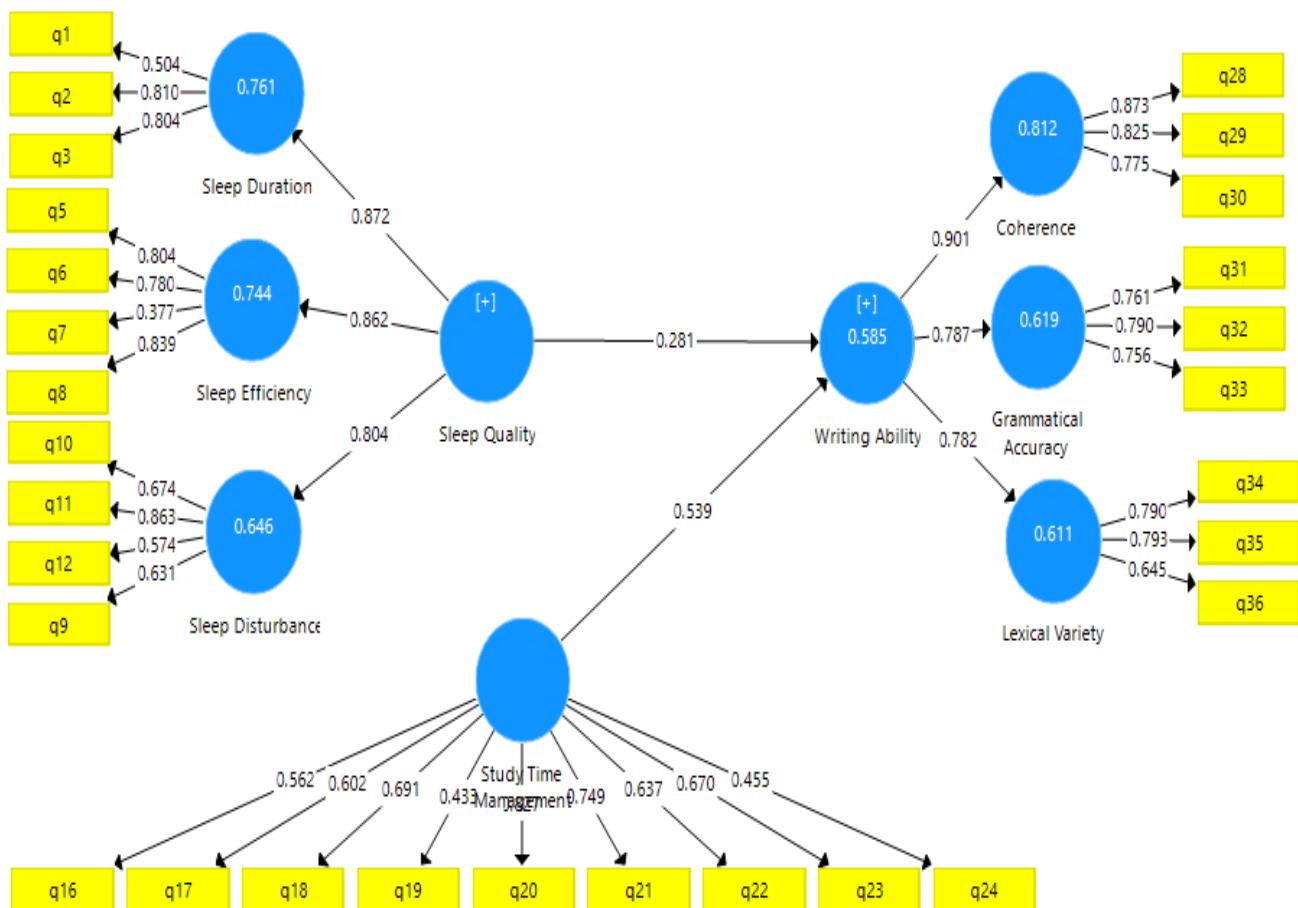
Table 2. Results of Goodness-of-Fit Assessment of the Model

	R Square	Q²	GOF
Sleep Quality	-----	0.41	0.555
Study Time Management	-----	0.40	
Writing Ability	0.585	0.42	

Continuing with the structural model analysis, the results of the path analysis showed that sleep quality has a positive and significant effect on learners' writing ability. In other words, the more quality and regular sleep learners have, the better their concentration, intellectual coherence, and linguistic accuracy in writing English texts will be. In addition, the findings showed that study time management also plays an effective and reinforcing role in improving writing ability, because skills in planning and allocating study time increase mental productivity and reduce anxiety when writing.

Table 3. Results of research hypotheses

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Sleep Quality -> Writing Ability	0.281	0.101	2.769	0.006
Study Time Management -> Writing Ability	0.539	0.091	5.925	0.000

**Figure 1. Confirmatory Factor Analysis Using Partial Least Squares (PLS)**

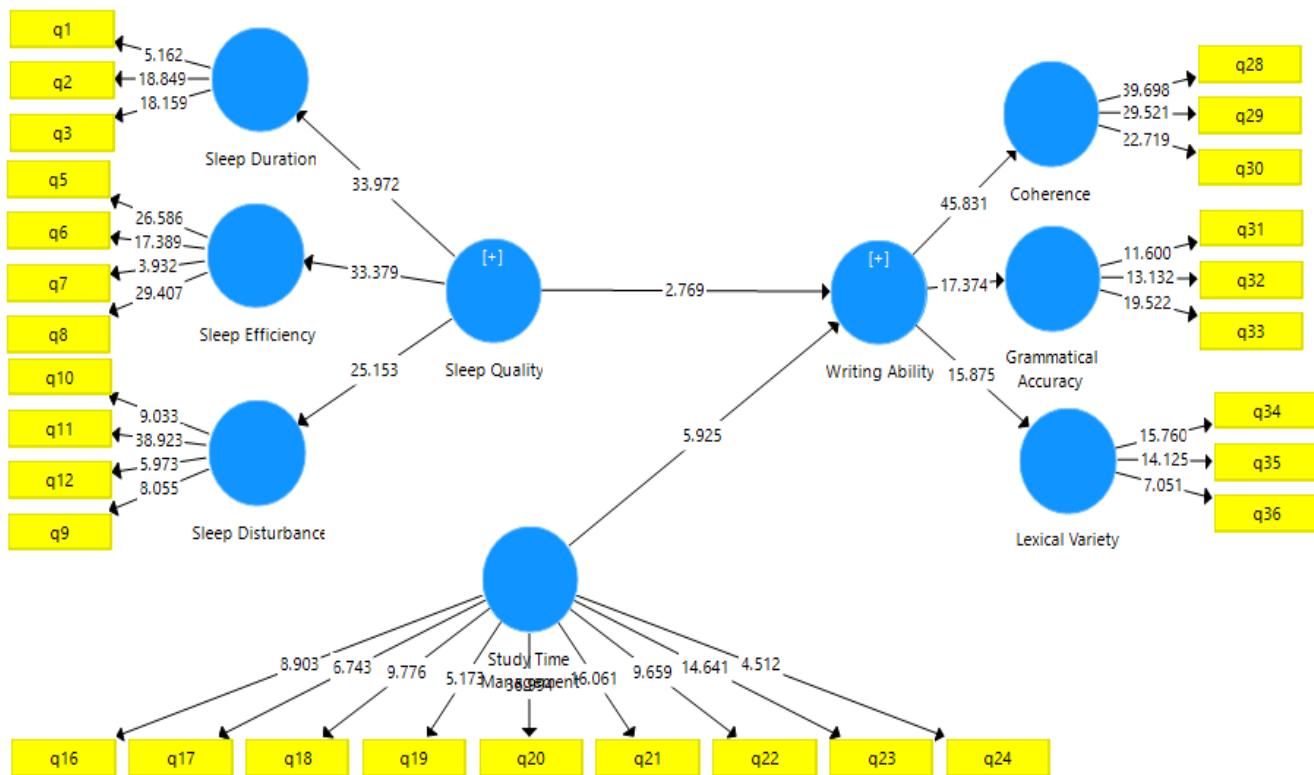


Figure 2. Significance Model of the Study (t-Value Statistics)

Discussion and Conclusion

This paper examined the effects of sleep quality and study time management on writing ability in English language and literature students in Iraq. The findings indicated the effects of sleep quality on students' writing skills and highlighted a positive and clear relationship between study time management and improving writing skills. In explaining these results, it can be added that sleep quality and study time management are two important cognitive factors in predicting the writing ability of Iraqi language learners. In fact, insufficient sleep destroys thinking and coherence in writing and reduces the learner's concentration, so that studies have shown that written coherence and structure in essays presented by students with sufficient sleep are more observed (xu et al, 2025). The results also showed that study time management enables students and English language learners to better plan their study of linguistic structures and, as a result, improve their proficiency in writing English texts, which in turn can minimize the learner's anxiety when writing. These findings are consistent with the results of studies by Ramadhani (2024) and Buraimo et al (2024) who emphasize the importance of time management in improving language learners' performance. Overall, our study makes a comprehensive contribution to understanding how physiological and cognitive factors influence learners' writing performance. By explaining how quality sleep patterns and study planning and scheduling affect writing outcomes, we provide useful insights for learners who are striving to improve their skills. Our research provides practical insights for developing specific interventions that target individual psychological aspects to enhance learners' competence.

Limitations and Future Studies

This study has some limitations. For example, all data measurements are based on the perspectives of English language learners, which is somewhat subjective. In future studies, professors and students from other fields such as French, German, etc. can also provide their complementary opinions to fill the gaps in self-reports. Second, this study only used a cross-sectional design and questionnaire distribution to examine the effects of sleep quality and study time management on students' writing skills, so future studies can use qualitative methods and study, discuss, and examine the opinions of reporters and SITE in this area. Finally, this study only studied English language students in Iraq, whose conditions may be different from other regions and countries, thus limiting the generalizability of the findings.

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