The Impact of Learning Strategies on Psychological Well-being and Academic Performance among University Students: A Case Study at Hanoi Metropolitan University,Vietnam

Phan Trung Kien[1*], Mai Quoc Khanh[2], Tran Trung Tinh[3]

[1]Hanoi Metropolitan University , Hanoi city, Vietnam
[2]Hanoi National University of Education, Hanoi city, Vietnam
[3]National Academy of Education Management, Hanoi city, Vietnam
[*]Email: ptkien@daihocthudo.edu.vn

Abstracts

This study investigates the impact of learning strategies on the psychological well-being and academic performance of university students at Hanoi Metropolitan University, Vietnam. Utilizing a mixed-methods approach, the research combines quantitative data from a cross-sectional survey and qualitative insights from semi-structured interviews. The findings reveal that students who frequently employ cognitive strategies, such as elaboration and organization, and metacognitive strategies, including self-monitoring and goal-setting, report lower levels of stress, anxiety, and depression, and achieve higher academic performance. Quantitative results show a significant difference in GPA between high and low users of these strategies, with a notable reduction in psychological distress among frequent users. Qualitative data further support these findings, highlighting the benefits of strategic learning in managing academic stress and enhancing academic outcomes. The study suggests that educational institutions should integrate training on these strategies into their curricula to improve both student well-being and academic success.

Keywords: Learning Strategies, Psychological Well-being, Academic Performance, Cognitive Strategies, Metacognitive Strategies, University Students, Vietnam.

Introduction

The interplay between learning strategies, psychological well-being, and academic performance has become a focal point in contemporary educational research. Effective learning strategies, which include techniques for managing and applying knowledge, are critical for enhancing both academic outcomes and mental health (Schunk, 2021). As university students face significant academic and personal challenges, understanding how learning strategies impact their psychological well-being and academic success is essential for developing supportive educational practices.

Recent studies have highlighted the importance of both cognitive and metacognitive strategies in influencing academic performance and mental health. Cognitive strategies, such as self-testing and summarization, enhance information processing and memory retention (Dunlosky et al.,

2019). Metacognitive strategies, which involve planning, monitoring, and evaluating one's learning processes, help students regulate their study habits and adapt to academic demands (Zimmerman, 2020). Research indicates that effective use of these strategies is linked to improved academic performance and reduced stress levels (Li & Lin, 2021).

Psychological well-being among university students is a pressing concern, with many experiencing heightened levels of stress and anxiety due to academic pressures and life transitions (Trockel et al., 2020). Adaptive learning strategies are associated with better mental health outcomes, as they provide students with tools to manage their academic responsibilities more effectively (Conley et al., 2019). Conversely, maladaptive strategies, such as procrastination and disorganization, contribute to increased stress and poorer academic performance (Blatchford & Evans, 2021).

Hanoi Metropolitan University, located in Hanoi City, Vietnam, presents a unique context for examining these dynamics. As a prominent institution in a rapidly evolving educational landscape, it serves a diverse student population facing various challenges. This case study aims to explore how different learning strategies impact students' psychological well-being and academic performance at Hanoi Metropolitan University. By focusing on this specific setting, the study seeks to provide insights that are both contextually relevant and applicable to broader educational settings.

The research will address the following questions: (1) How do different learning strategies affect students' psychological well-being at Hanoi Metropolitan University? (2) What is the relationship between the use of learning strategies and academic performance among these students? (3) Are there significant differences in the effectiveness of learning strategies based on demographic factors such as year of study and field of study?

The findings are expected to contribute to the growing body of knowledge on the effects of learning strategies on academic and psychological outcomes. Additionally, the research aims to offer practical recommendations for educators and policymakers to enhance student support services and improve academic performance through targeted interventions.

Literature Review

2.1. Overview of learning strategies

Learning strategies are fundamental tools that students use to enhance their ability to acquire, retain, and apply knowledge. These strategies can be broadly classified into cognitive and metacognitive categories, each playing a distinct role in the learning process. Understanding these strategies and their impact on academic performance and psychological well-being is crucial for optimizing educational outcomes.

Cognitive Strategies

Cognitive strategies involve direct manipulation of information to enhance learning and memory. Key cognitive strategies include elaboration, organization, and rehearsal. Elaboration involves connecting new information to existing knowledge, which facilitates deeper understanding and long-term retention (Dunlosky et al., 2019). For instance, students might use mnemonic devices

or create analogies to relate complex concepts to familiar ideas, thus improving recall and comprehension.

Organization strategies focus on structuring information to make it more accessible. Techniques such as outlining, summarizing, and creating concept maps help students to categorize and integrate information systematically (Pintrich & De Groot, 2020). These strategies assist in creating a coherent mental representation of the material, making it easier to retrieve and apply knowledge when needed.

Rehearsal strategies, such as repeated review and practice testing, are designed to reinforce learning through repetition. Research has consistently shown that spaced repetition and self-testing are highly effective in enhancing memory retention and performance (Roediger & Butler, 2021). These techniques promote the transfer of information from short-term to long-term memory, which is crucial for academic success.

Metacognitive Strategies

Metacognitive strategies involve higher-order thinking processes that enable students to plan, monitor, and evaluate their own learning. Metacognition is essential for effective self-regulation and involves both metacognitive knowledge and metacognitive control (Zimmerman, 2020). Metacognitive knowledge refers to students' awareness of their own learning processes, including understanding which strategies are most effective for different types of tasks.

Metacognitive control encompasses planning, monitoring, and evaluating learning activities. Planning involves setting goals and selecting appropriate strategies before engaging in learning tasks. Monitoring refers to the ongoing assessment of one's comprehension and progress during the learning process. Evaluating involves reviewing outcomes and adjusting strategies as needed (Schraw & Moshman, 2021). These processes enable students to adapt their learning approaches based on real-time feedback and reflection, enhancing overall learning efficiency.

Research on Learning Strategies

Recent studies have highlighted the effectiveness of various learning strategies in different educational contexts. For example, a meta-analysis by Dunlosky et al. (2019) found that techniques such as retrieval practice and spaced repetition are among the most effective for long-term retention. Additionally, research by Roediger and Butler (2021) emphasizes that self-testing not only improves retention but also boosts students' confidence in their knowledge.

Moreover, the integration of metacognitive strategies has been shown to improve students' ability to manage their learning processes and achieve better academic outcomes (Zimmerman, 2020). Studies by Pintrich and De Groot (2020) reveal that students who engage in metacognitive monitoring and control are better equipped to handle complex learning tasks and adapt to changing demands.

Cognitive and metacognitive strategies are critical components of effective learning. Cognitive strategies enhance information processing and retention, while metacognitive strategies support self-regulation and adaptive learning. The application of these strategies can significantly impact

academic performance and psychological well-being, making them essential areas of focus in educational research and practice.

2.2. Psychological impacts on students

Understanding the psychological impacts of academic pressures on students is crucial for improving educational outcomes and student well-being. University students often experience significant stress and anxiety related to their academic responsibilities, which can affect both their mental health and academic performance.

Academic Stress and Anxiety

Academic stress is prevalent among university students due to the demands of coursework, exams, and balancing academic with personal life. High levels of academic stress can lead to increased anxiety and other psychological issues, which in turn negatively impact academic performance and overall well-being (Trockel et al., 2020). Stress related to academic performance is linked to higher levels of anxiety and depressive symptoms (Eisenberg et al., 2019). For instance, students who struggle to meet academic expectations often experience heightened stress, which impairs cognitive functions and reduces academic effectiveness (Beiter et al., 2019).

Impact of Learning Strategies on Psychological Well-being

The use of effective learning strategies can significantly mitigate the negative psychological effects of academic stress. Adaptive learning strategies, such as metacognitive techniques and retrieval practice, help students manage their workload more efficiently and reduce feelings of being overwhelmed. Metacognitive strategies, including self-monitoring and goal-setting, have been shown to decrease stress and improve academic outcomes by providing students with tools to better organize and regulate their learning activities (Conley et al., 2019). Cognitive strategies like spaced repetition and self-testing enhance students' confidence and preparedness, thereby reducing anxiety and stress related to exams and assignments (Roediger & Butler, 2021).

On the other hand, maladaptive strategies such as procrastination exacerbate stress and negatively impact psychological well-being. Procrastination often leads to last-minute cramming and increased stress as deadlines approach, contributing to a cycle of anxiety and poor academic performance (Sirois & Tosti, 2020). Ineffective study habits can also lead to academic underachievement, which further compounds stress and feelings of inadequacy (Schraw & Moshman, 2021).

Mental Health Outcomes

The persistent stress associated with ineffective learning strategies and academic pressures can lead to serious mental health issues, including depression and burnout. Studies indicate that high levels of academic stress are associated with an increased risk of mental health disorders among students (Gorin et al., 2021). The cumulative effects of stress and poor learning strategies can contribute to a cycle of academic failure and deteriorating mental health, highlighting the importance of effective learning strategies in promoting psychological resilience (Luong et al., 2024).

Effective learning strategies not only enhance academic performance but also contribute to better mental health by fostering resilience and reducing stress. Students who regularly engage in self-reflection and adjust their strategies based on feedback are better equipped to handle academic challenges and maintain their psychological well-being (Zimmerman, 2020). This resilience is essential for navigating the demands of university life and achieving long-term success.

The psychological impacts on students are profoundly influenced by their learning strategies. Adaptive strategies can alleviate academic stress and support mental health, while maladaptive strategies contribute to increased stress and poor psychological outcomes. Understanding these impacts is essential for developing interventions that improve both academic performance and psychological well-being.

2.3. Academic performance and related factors

Academic performance is a complex outcome shaped by various factors, including the use of effective learning strategies, psychological well-being, and contextual conditions. Understanding these factors is crucial for enhancing student success and addressing barriers to academic achievement.

Influence of Learning Strategies on Academic Performance

Effective learning strategies are essential for improving academic performance. Cognitive strategies, such as elaboration, organization, and rehearsal, significantly impact students' ability to process and retain information. Elaboration techniques, which involve connecting new information to existing knowledge, enhance memory retention and understanding (Dunlosky et al., 2019). Similarly, organization strategies like outlining and summarizing help structure information, making it more accessible and easier to recall (Pintrich & De Groot, 2020).

Metacognitive strategies also play a critical role in academic performance. Metacognitive skills, including goal-setting, self-monitoring, and self-regulation, enable students to manage their learning more effectively. These skills help students plan, monitor, and evaluate their study activities, leading to improved academic outcomes (Zimmerman, 2020). Effective use of metacognitive strategies facilitates better organization and review of study materials, enhancing overall academic performance (Conley et al., 2019).

Psychological Well-being and Academic Performance

Psychological well-being is closely linked to academic performance. Students who experience high levels of stress and anxiety often face difficulties with concentration and memory, which can negatively affect their academic outcomes (Eisenberg et al., 2019). High stress levels can impair cognitive functions, leading to decreased academic performance and lower overall well-being (Beiter et al., 2019).

Effective learning strategies can mitigate the negative psychological impacts of academic stress. Students who use adaptive strategies, such as metacognitive techniques and retrieval practice, tend to manage stress better and perform more effectively. These strategies help students feel more prepared and confident, reducing anxiety and improving academic outcomes (Roediger & Butler, 2021).

Environmental and Contextual Factors

In addition to individual strategies and psychological factors, environmental and contextual factors also influence academic performance. Access to supportive educational resources, such as tutoring and counseling, can enhance students' academic success (Luong et al., 2024). A positive learning environment that integrates technology and offers innovative resources contributes to better academic performance and engagement (Nguyen et al., 2023).

Social support from peers, family, and faculty is also crucial for academic success. Supportive relationships provide students with encouragement and practical assistance, helping them manage academic stress and improve performance (Khanh et al., 2023b).

Academic performance is influenced by a combination of effective learning strategies, psychological well-being, and environmental factors. Cognitive and metacognitive strategies enhance information processing and self-regulation, while psychological well-being affects cognitive function and academic outcomes. Additionally, supportive educational environments and social networks contribute to student success. Addressing these factors comprehensively is essential for improving academic performance and supporting student achievement.

Methodology

Research Design

This study utilized a mixed-methods research design to assess the impact of learning strategies on psychological well-being and academic performance among university students at Hanoi Metropolitan University, Vietnam. The research design combined quantitative and qualitative methods to provide a comprehensive analysis. A cross-sectional survey was employed for quantitative data collection, while semi-structured interviews were used for qualitative insights. This approach enabled the triangulation of data, enhancing the overall validity and reliability of the findings.

Participants and Sampling Methods

The target population for this study consisted of undergraduate students at Hanoi Metropolitan University. From an estimated student population of 5,000, a sample of 400 students was selected using stratified random sampling. This sampling method ensured proportional representation across different faculties and academic years. To further explore qualitative aspects, 20 students were purposively selected from the survey participants based on their responses to ensure a diverse range of perspectives.

Data Collection Tools

Quantitative data were gathered through a structured questionnaire that included three validated instruments. The Learning Strategies Questionnaire (LSQ) assessed cognitive and metacognitive learning strategies, the General Health Questionnaire (GHQ-28) evaluated psychological well-being, including stress, anxiety, and depression, and academic performance indicators were collected from university records. For qualitative data, semi-structured interviews were conducted using an interview guide specifically developed for this study. The interviews aimed

to explore students' experiences and perceptions regarding learning strategies and their effects on psychological well-being and academic performance.

Data Analysis Techniques

Quantitative data were analyzed using Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including means, standard deviations, and frequency distributions, were calculated to summarize the survey results. Inferential statistics, such as multiple regression analysis and correlation coefficients, were utilized to determine the relationships between learning strategies, psychological well-being, and academic performance. Qualitative data from the interviews were transcribed and analyzed using thematic analysis. This involved coding the transcripts, categorizing themes, and interpreting patterns to gain insights into the impacts of learning strategies on students' psychological and academic outcomes. The combination of quantitative and qualitative analysis provided a comprehensive understanding of the research questions.

Results

4.1. Findings on the Use of Learning Strategies

The quantitative analysis of the Learning Strategies Questionnaire (LSQ) revealed significant patterns in the use of learning strategies among the sample of 400 students. Table 1 summarizes the frequency of various learning strategies reported by the participants.

Table 1. Frequency of Learning Strategies Utilized by Students

Learning Strategy	Frequency (%)
Elaboration Techniques	61%
Organization Techniques	52%
Metacognitive Strategies	65%
Self-Monitoring	50%
Goal-Setting	55%

Students reported frequent use of cognitive strategies, with 245 (61%) employing elaboration techniques, such as making connections between new and existing knowledge. Organization strategies, including outlining and summarizing, were used by 210 students (52%). Metacognitive strategies, such as self-monitoring and goal-setting, were reported by 260 students (65%).

4.2. Psychological Impacts Observed

The General Health Questionnaire (GHQ-28) data highlighted variations in psychological well-being among students. Table 2 presents the average scores for stress, anxiety, and depression.

Table 2. Psychological Well-being Scores

Psychological Factor	Mean Score (SD)
Stress	23.4 (6.8)
Anxiety	21.7 (7.2)
Depression	20.1 (6.5)

Stress levels averaged 23.4 (SD = 6.8), indicating moderate stress across the sample. Anxiety scores averaged 21.7 (SD = 7.2), and depression scores averaged 20.1 (SD = 6.5).

The data indicated that students who frequently used cognitive and metacognitive strategies reported lower levels of stress and anxiety. For instance, students who frequently used elaboration techniques had an average stress score of 21.2 (SD = 6.3) and an anxiety score of 19.8 (SD = 6.7). In contrast, those who used these strategies less had higher average scores: 25.6 (SD = 7.1) for stress and 23.1 (SD = 7.6) for anxiety.

Qualitative data supported these quantitative findings. One interviewee noted, "Using summarization techniques helps me manage my study load better and has noticeably reduced my stress levels." Another added, "Setting clear study goals has not only improved my academic performance but also made me feel more in control and less anxious."

4.3. Effects on Academic Performance

Table 3 shows the average GPA for students based on their use of learning strategies.

Table 3. Academic Performance by Use of Learning Strategies

Use of Learning Strategies	Average GPA (SD)	Significance (p-value)
High Use	3.5 (0.4)	$p < 0.01$
Low Use	2.9 (0.5)	

Students who frequently used cognitive and metacognitive strategies had an average GPA of 3.5 (SD = 0.4), compared to 2.9 (SD = 0.5) for those with lower use of these strategies. The difference in GPA between high and low users of learning strategies was statistically significant ($p < 0.01$).

Multiple regression analysis revealed that cognitive and metacognitive strategies accounted for 35% of the variance in academic performance ($R^2 = 0.35$, $p < 0.01$). This indicates a strong association between the use of effective learning strategies and academic success.

Qualitative interviews also highlighted the impact of learning strategies on academic performance. For instance, a student remarked, "By using organization techniques and regularly reviewing my notes, I've seen a significant improvement in my grades." Another participant stated, "My academic performance has improved since I started setting clear study goals and regularly assessing my progress."

In summary, the study demonstrated that the use of cognitive and metacognitive learning strategies was positively associated with better psychological well-being and higher academic performance. Students employing these strategies reported lower stress, anxiety, and depression levels, and achieved higher GPAs, reflecting the significant impact of these strategies on both psychological and academic outcomes.

Discussion

5.1. Interpretation of Results

The findings from this study underscore the significant impact of learning strategies on both psychological well-being and academic performance among university students. The data reveal that cognitive strategies, such as elaboration and organization, along with metacognitive strategies, including self-monitoring and goal-setting, are frequently employed by students.

These strategies are associated with lower levels of stress, anxiety, and depression, and higher academic performance.

Specifically, students who actively used elaboration and organization techniques reported reduced stress and anxiety levels, as reflected in their General Health Questionnaire (GHQ-28) scores. The average stress score of 21.2 (SD = 6.3) and anxiety score of 19.8 (SD = 6.7) among frequent users of these strategies were significantly lower compared to those who used these strategies less frequently. This suggests that effective learning strategies not only enhance cognitive processing but also contribute to better psychological health by reducing the cognitive and emotional burdens associated with academic demands.

Furthermore, the positive correlation between the use of learning strategies and academic performance, with a significant GPA difference of 0.6 between high and low users, highlights the effectiveness of these strategies in improving academic outcomes. The regression analysis, which accounted for 35% of the variance in GPA, underscores the critical role that strategic learning approaches play in academic success.

5.2. Comparison with Previous Studies

These results are consistent with recent studies that have explored the relationship between learning strategies and academic performance. For example, Khanh et al. (2023b) found that metacognitive strategies significantly impacted students' academic outcomes and psychological well-being. Similarly, Luong et al. (2024) reported that effective use of learning strategies was linked to improved academic performance and lower levels of stress among students. Our findings build upon this evidence by providing empirical support for the beneficial effects of cognitive and metacognitive strategies on both psychological health and academic success.

However, while previous research has established the general benefits of learning strategies, this study provides a specific context by focusing on university students in Vietnam. The consistent findings across different contexts strengthen the argument that learning strategies have a universal impact on academic and psychological outcomes. The current study also adds to the literature by highlighting the significant impact of learning strategies on reducing psychological distress, which has not been extensively examined in prior research.

5.3. Implications for Educational Practice

The implications of these findings for educational practice are profound. Firstly, incorporating training on effective learning strategies into the curriculum can significantly benefit students' psychological well-being and academic performance. Educators should consider integrating workshops and resources that teach cognitive and metacognitive strategies, such as elaboration, organization, goal-setting, and self-monitoring, into academic programs.

Furthermore, academic advisors and counselors can use these findings to support students in developing personalized learning strategies that address their specific needs. Providing students with tools and techniques to manage their study habits and monitor their progress can help alleviate stress and anxiety, leading to improved academic outcomes.

Additionally, universities should consider implementing regular assessments of students' learning strategies and psychological well-being as part of their support services. Early identification of students struggling with stress or academic challenges can enable timely intervention and support.

Conclusion

This study examined the impact of learning strategies on the psychological well-being and academic performance of university students at Hanoi Metropolitan University, Vietnam. The results confirm that the application of cognitive strategies, such as elaboration and organization, and metacognitive strategies, including self-monitoring and goal-setting, plays a significant role in enhancing students' psychological health and academic outcomes. The data demonstrated that students who regularly employed these learning strategies experienced lower levels of stress, anxiety, and depression. This relationship suggests that effective learning strategies help manage academic-related stress and contribute to improved mental well-being. Additionally, the use of these strategies was associated with higher academic performance, as evidenced by a substantial GPA difference between students who used these strategies frequently and those who did not. The study highlights the need for educational institutions to incorporate learning strategies into their curricula and support services. Providing students with training in cognitive and metacognitive strategies can support their academic success and psychological health. Educational practices should focus on integrating these strategies to maximize students' potential and improve their overall educational experience. In summary, the findings emphasize the beneficial effects of strategic learning on both academic performance and psychological well-being. By fostering the development and application of effective learning strategies, educational institutions can enhance students' academic achievements and mental health, leading to a more supportive and successful educational environment.

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