

The Role of Soft Skills in Improving Students' Academic Performance: A Case Study in Hanoi Capital, Vietnam

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ABSTRACT

This study evaluates the role of soft skills in improving students' academic performance using the Input-Process-Output (IPO) model. Data were collected from 314 university students in Hanoi and analyzed using Amos 20. The findings indicate that teamwork skills (TS), critical thinking (CT), creative thinking (IN), and communication skills (CS) positively impact academic performance (AP) by enhancing the learning process (LP). These results contribute to the educational literature by highlighting the significance of soft skills in academic success. Based on these findings, educational institutions and students can develop appropriate strategies to optimize learning outcomes.

Keywords: Team work skills, critical thinking, creative thinking, academic performance, IPO model.

INTRODUCTION

In the context of modern education, equipping students with not only specialized knowledge but also soft skills has become increasingly important (Chamorro-Premuzic et al., 2010; Chinh & Cuong, 2023; Chinh et al., 2021). The rapid development of technology and changes in teaching methods require students to be adaptable, think critically, and work effectively in both academic and professional environments (Cuong et al., 2019; T. Dang et al., 2021; Ngo & Thuy, 2024). Skills such as teamwork, creative thinking, critical thinking, and communication play a crucial role in helping students acquire knowledge, solve problems, and improve their academic performance. However, cultivating and applying soft skills remains challenging (Nazaré de Freitas & Assoreira Almendra, 2022). One major difficulty is the lack of awareness regarding the importance of soft skills, causing many students to neglect their development (Akhtar, Hussain, Li, Cuong, et al., 2024; Nazaré de Freitas & Assoreira Almendra, 2022). Additionally, traditional learning environments still focus heavily on theoretical knowledge rather than practical application, limiting opportunities for students to practice teamwork, communication, and critical thinking. Moreover, academic pressure, heavy coursework, and limited time make it difficult for students to balance their studies with soft skill development (Milanovich-Eagleson et al., 2015; Nguyen et al., 2023). Furthermore, differences in personality and educational background also impact each individual's ability to acquire and apply soft skills effectively. These challenges require both educational institutions and students to adopt appropriate strategies to improve the practice and application of soft skills in both academic and real-life settings.

Soft skills are a set of personal and social abilities that enable individuals to interact effectively with others, adapt to different environments, and handle tasks flexibly. Unlike hard skills, which are related to specialized knowledge and technical expertise, soft skills encompass elements such as communication, teamwork, critical thinking, creative thinking, time management, problem-solving, and adaptability (Chinh et al., 2020; Kechagias, 2011). These skills not only help individuals build strong relationships but also play a crucial role in enhancing academic and work performance (Chiu et al., 2016; T. T. Dang et al., 2024). In a rapidly changing world, soft skills have become an essential factor in achieving success in education and careers, as well as fostering overall personal development in life.

Previous studies have highlighted the important role of soft skills in enhancing students' academic performance (T. T. Dang et al., 2024; Keng, 2024; Khalid et al., 2024). Many studies have confirmed that skills such as

teamwork, communication, critical thinking, and creative thinking not only help students acquire knowledge more effectively but also improve problem-solving abilities and adaptability in modern learning environments (T. T. Dang et al., 2024; Ngo & Thuy, 2024; Suyansah et al., 2023). Some studies have also developed models to assess the relationship between soft skills and academic performance, providing valuable empirical evidence. However, there are still several limitations that need to be addressed. First, most studies focus on specific soft skills without comprehensively examining different groups of soft skills. Second, no research has evaluated the mediating role of the learning process in the relationship between soft skills and academic performance. These gaps highlight the need for further research to provide a more comprehensive and systematic understanding of the role of soft skills in higher education.

This study aims to fill the existing gaps in previous research by providing a more comprehensive approach to the role of soft skills in students' academic performance. First, instead of focusing on individual skills, this study examines multiple essential skill groups, including teamwork, critical thinking, creative thinking, and communication, to assess their overall impact on academic outcomes. Second, rather than merely identifying the direct relationship between soft skills and academic performance, this study analyzes the mediating role of the learning process. By employing the IPO model and analyzing empirical data from 314 university students, the research offers a more systematic approach, shedding light on the mechanisms through which soft skills influence academic achievement. The findings of this study not only contribute to the academic literature but also provide practical insights for educational institutions to design appropriate training programs aimed at enhancing both soft skills and student performance.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Previous studies have affirmed the crucial role of teamwork skills in enhancing academic performance and professional development. Team-based learning (TBL) has been proven to be an effective approach for improving problem-solving abilities, critical thinking, communication, and collaboration among students. When integrated into courses such as anatomy and health assessment, TBL not only enhances academic outcomes but also fosters a positive attitude toward teamwork, thereby enabling students to absorb knowledge more effectively (Akhtar, Hussain, Li, Cheng, et al., 2024; Cuong et al., 2024; Park et al., 2015). Additionally, research has indicated a strong relationship between teamwork skills and various personal and academic factors, including gender, academic year, and grade point average (GPA). Specifically, female students tend to outperform their male counterparts in teamwork skills, except in leadership, and these skills tend to develop progressively throughout their studies (Huitt et al., 2015). Furthermore, GPA is positively correlated with teamwork skills, suggesting that students with strong collaboration and adaptability skills tend to achieve higher academic performance (District & Province, 2024; Prada et al., 2022). These findings highlight the importance of incorporating collaborative learning strategies into university curricula, not only to cultivate teamwork skills but also to optimize academic effectiveness, ensuring students are well-equipped for both academic and professional success.

H1: Teamwork skills (TS) has a positive impact on academic performance (AP) through learning process (LP)

Critical thinking plays a crucial role in enhancing students' academic performance and is influenced by various factors such as learning styles, thinking dispositions, and educational contexts. Research has shown that students with strong critical thinking skills tend to achieve higher academic results, as they can analyze, evaluate, and solve problems more effectively throughout their learning process (Ghazivakili et al., 2014; Huyen et al., 2024). Moreover, learning styles have been found to be closely related to both critical thinking and academic achievement (Ren et al., 2020). Certain learning styles enable students to develop logical reasoning, assess information, and make informed decisions more efficiently. Additionally, critical thinking disposition the habitual tendency to think logically and systematically is considered a key factor that allows students to fully utilize their cognitive abilities in academic settings. Beyond individual impact, the influence of critical thinking varies across different academic disciplines. Subjects that emphasize reasoning, analysis, and evaluation, such as Marketing or Strategy & Leadership, tend to benefit more from critical thinking skills than technical or mathematical subjects (D'Alessio et al., 2019; Khoa et al., 2023). This suggests the importance of implementing appropriate teaching methods to foster critical thinking in different fields of study.

H2: Critical thinking skills (CT) has a positive impact on academic performance (AP) through learning process (LP)

Numerous studies have confirmed the importance of creative thinking in students' academic performance. Findings indicate a positive relationship between creative thinking and academic achievement, with convergent thinking playing a more significant role than divergent thinking (Huong et al., 2024; Yang & Zhao, 2021). Additionally, the impact of creative thinking on academic performance can be mediated by factors such as self-esteem and internal locus of control (Minh, Huong, Trang, et al., 2025; Ruiz et al., 2014). Furthermore, some studies have examined the moderating role of gender in the relationship between creative thinking and academic performance (Mahama et al., 2019; Minh, Huong, Cuong, et al., 2025). Results suggest that male students tend to leverage creative thinking more effectively in subjects like English and Mathematics, whereas female students may require additional support and training to develop this skill at the same level as their male counterparts. This highlights the need for educational policies that focus on fostering creative thinking in both genders to ensure equal learning opportunities. Moreover, creative thinking does not function in isolation but is closely related to critical thinking and reflective thinking. Research has shown that all three types of thinking positively influence academic achievement, emphasizing the importance of integrating teaching methods that promote creative, critical, and reflective thinking in education (Akpur, 2020).

H3: Creative thinking skills (IN) has a positive impact on academic performance (AP) through learning process (LP)

Communication skills play a crucial role in the educational process, enabling the effective transmission and exchange of ideas (Cuong et al., 2025; Sharifirad et al., 2012). Numerous studies have focused on assessing the knowledge, attitudes, and performance of both faculty members and students regarding communication skills in academic settings. Findings indicate that while faculty members generally have a positive attitude toward communication skills and demonstrate relatively acceptable performance, their in-depth knowledge of these skills remains limited. This highlights the need for specialized training programs to enhance effective communication in teaching (Khan et al., 2017; Quỳnh & Minh, 2024). Additionally, research has shown that students often hold negative perceptions of communication skills courses, even though they attempt to maintain a positive attitude during the learning process (Asemanyi, 2015). Some students face challenges due to weak language backgrounds, which impact their communicative competence and academic performance. Furthermore, factors such as large class sizes, inadequate teaching facilities, and a shortage of faculty members further hinder the effectiveness of teaching and learning communication skills.

H4: Communication skills (CS) has a positive impact on academic performance (AP) through learning process (LP)

Conceptual model is presented below (See Fig.1)

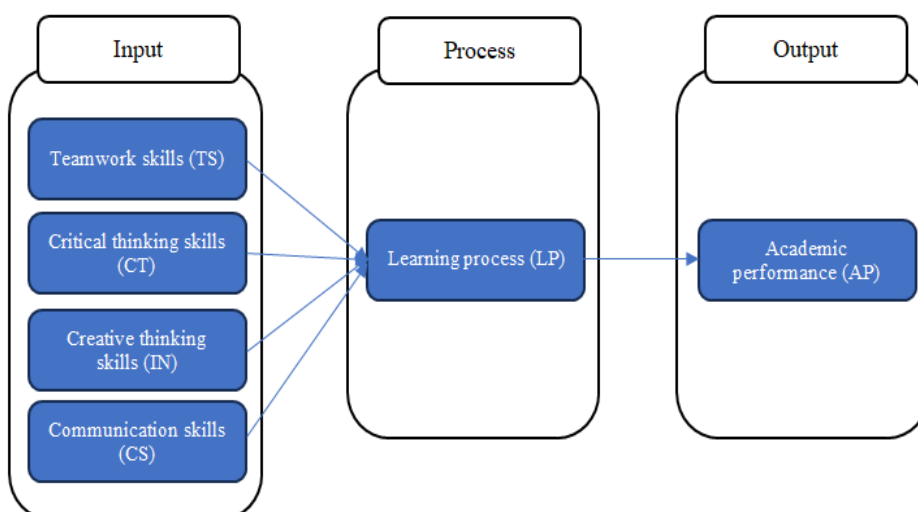


Figure 1. Conceptual model

METHODOLOGY

Data collection

The data was collected from September 2024 to November 2024 from university students in Hanoi. A total of 412 survey questionnaires were distributed, of which 314 were deemed valid for analysis.

Data analyst

The collected data was analyzed using AMOS 20 software. The measurement scales used in the study were adopted from previous research to ensure reliability and validity. Structural Equation Modeling (SEM) was applied to examine the relationships between variables, providing a comprehensive understanding of the impact of communication skills on academic performance.

RESULTS

Reliability and convergence value

The table 1 presents the reliability analysis and exploratory factor analysis (EFA) results for the study variables. The reliability of each scale was assessed using Cronbach's Alpha, with values indicating good internal consistency. The TS scale has a high reliability score of 0.805, suggesting strong internal consistency. The CT scale, with a Cronbach's Alpha of 0.702, is acceptable. The IN scale shows a strong reliability score of 0.812, indicating good consistency. Similarly, the CS scale demonstrates high reliability at 0.801, and the LP scale has the highest reliability at 0.831, confirming its robustness.

The factor analysis results show the KMO (Kaiser-Meyer-Olkin) measure for the dependent variable is 0.871, and for the independent variables, it is 0.765, both indicating that the data is suitable for factor analysis. The Bartlett's test of sphericity (Sig = 0.000) confirms statistical significance, justifying the use of factor analysis. The variance explained (VE) is 78.452% for the dependent variable and 77.668% for the independent variables, which means that the extracted factors account for a high proportion of the variance in the data. The eigenvalues of 1.512 (dependent variable) and 3.365 (independent variables) further support the validity of the factor structures.

Table 1. Reliability and convergence value

Items	Total reliability	Cronbach's Alpha	Mean	Factor loading	
				Dependent variable	Independent variable
TS	0.805				
TS1		0.604	3.34	0.792	
TS2		0.762	3.58	0.872	
TS3		0.756	3.68	0.784	
TS4		0.870	3.54	0.842	
TS5		0.803	3.75	0.872	
CT	0.702				
CT1		0.814	3.85	0.812	
CT2		0.797	4.00	0.756	
CT3		0.753	3.79	0.736	
CT4		0.757	3.78	0.828	
IN	0.812				
IN1		0.698	3.93	0.848	
IN2		0.617	3.39	0.756	
IN4		0.630	3.87	0.773	
IN5		0.617	3.68	0.871	

CS	0.801				
CS1		0.674	3.57	0.761	
CS2		0.609	2.78	0.750	
CS3		0.654	2.75	0.748	
CS4		0.713	3.32	0.843	
LP	0.831	0.631	3.67	0.831	
LP1		0.739	2.45	0.735	
LP2		0.614	2.53	0.767	
LP3		0.723	3.44	0.834	
AP		0.751	3.57		0.721
AP1		0.776	2.41		0.743
AP2	0.801	0.713	2.53		0.767
AP3		0.843	3.46		0.881
Dependent variable	KMO = 0.871 Sig = 0.000 VE = 78.452 Eigenvalues = 1.512		Independent variable	KMO = 0.765 Sig = 0.000 VE = 77.668 Eigenvalues = 3.365	

Source: Calculated by Author, 2025

Hypotheses testing

The table 2 presents the hypothesis testing results, indicating that all proposed hypotheses are supported. The p-values for all relationships are below 0.05, confirming statistical significance. The indirect effect of TS on AP through LP is significant ($p = 0.000$, estimate = 0.311), supporting the hypothesis. Similarly, CT positively influences AP via LP with a significant effect ($p = 0.000$, estimate = 0.321). IN also has a statistically significant impact on AP through LP ($p = 0.000$, estimate = 0.214). Lastly, CS exhibits a significant effect on AP via LP, with a p-value of 0.006 and an estimate of 0.243.

Regarding model fit, the Chi-square/df ratio is 1.641, which is within the acceptable range for a good model fit. The Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) values are 0.830 and 0.834, respectively, indicating an acceptable fit. The Goodness-of-Fit Index (GFI) is 0.777, which is slightly below the ideal threshold but still within an acceptable range. The Root Mean Square Error of Approximation (RMSEA) is 0.062, suggesting a reasonable model fit. Overall, the results confirm that the hypothesized relationships hold and that the model exhibits an acceptable fit for further interpretation.

Table 2. Hypotheses testing

Hypotheses	P-values	Estimate	Decision
TS → LP → AP	0,000	0,311	Accepted
CT → LP → AP	0,000	0,321	Accepted
IN → LP → AP	0,000	0,214	Accepted
CS → LP → AP	0,006	0,243	Accepted
Model fit		Chi-square/df = 1,641 TLI = 0,830 CFI = 0,834 GFI = 0,777 RMSEA = 0,062	

Source: Calculated by Author, 2025

DISCUSSION AND IMPLICATION

The findings of this study highlight the significant impact of various factors on academic performance (AP) through learning process (LP). Specifically, the results confirm that teamwork skills (TS), critical thinking (CT), creative thinking skills (IN), and communication skills (CS) positively influence AP through LP, as all hypotheses were statistically supported. Among these factors, critical thinking (CT) showed the strongest effect on AP, emphasizing the importance of analytical and problem-solving skills in academic success. Meanwhile, innovation (IN) had the lowest significant impact, suggesting that while creativity plays a role, it may require additional support or integration into the learning process to be more effective.

To enhance students' academic performance, several solutions should be implemented. First, universities should focus on improving teamwork skills (TS) by integrating more group-based projects, peer learning activities, and teamwork training workshops, enabling students to develop collaboration and leadership abilities. Additionally, fostering critical thinking (CT) through structured activities such as case studies, debates, and scenario-based learning will enhance students' analytical and decision-making skills. Encouraging innovation (IN) is also essential, which can be achieved by organizing research competitions, interdisciplinary collaborations, and mentorship programs to strengthen problem-solving abilities. Moreover, improving communication skills (CS) through training in public speaking, writing, and interpersonal communication, along with their integration into coursework, will ensure continuous development. Learning performance (LP) can be enhanced by establishing personalized learning programs, tutoring services, and study groups to support students in developing effective study habits and increasing engagement. Lastly, upgrading educational infrastructure by investing in modern lecture halls, digital tools, and reducing class sizes, along with continuous teacher training, will significantly improve the quality of education. These solutions collectively contribute to a more effective and supportive learning environment, ultimately leading to better academic outcomes.

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