STUDYING THE RELATIONSHIP BETWEEN SELF-DIRECTED LEARNING AND ACADEMIC ACHIEVEMENT OF UNDERGRADUATE STUDENTS AT NONG LAM UNIVERSITY HO CHI MINH CITY

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Abstract

This study investigates the relationship between self-directed learning (SDL) skills and academic achievement among undergraduate students at Nong Lam University, Ho Chi Minh City. The Self-Directed Learning Skills Scale (SDLSS) and cumulative GPA (CGPA) are used in this study to evaluate academic performance and SDL skills in a sample of 8,472 students. The findings indicate a significant correlation between academic success and SDL competencies, especially in areas like analyzing learning outcomes and processes. However, variations in SDL scores among different performance groups suggest the influence of additional factors, such as individual characteristics and external contexts, on academic outcomes. The findings highlight how crucial it is to develop SDL abilities for improvement on learning outcomes and efficiency. Furthermore, the study promotes a holistic approach to assessing academic achievement that takes into account more extensive learning aspects in addition to conventional GPA measurements. These insights provide valuable implications for educators and policymakers aiming to support student development in higher education.

Keywords: *Academic achievement, GPA, higher education, self-directed learning, undergraduate students.*

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NGHIÊN CỨU VỀ MỐI QUAN HỆ GIỮA NĂNG LỰC TỰ HỌC VÀ THÀNH TÍCH HỌC TẬP CỦA SINH VIÊN TẠI TRƯỜNG ĐẠI HỌC NÔNG LÂM THÀNH PHỐ HỒ CHÍ MINH

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Tóm tắt

Nghiên cứu này khảo sát mối quan hệ giữa kỹ năng tự học và thành tích học tập của sinh viên đại học tại Trường Đại học Nông Lâm TP. Hồ Chí Minh. Thang đo Kỹ năng Tự học (SDLSS) và điểm trung bình tích lũy (CGPA) được sử dụng trong nghiên cứu để đánh giá thành tích học tập và kỹ năng tự học trên mẫu gồm 8.472 sinh viên. Kết quả nghiên cứu cho thấy có mối tương quan có ý nghĩa giữa thành tích học tập và các năng lực tự học, đặc biệt ở các khía cạnh như phân tích kết quả và quá trình học tập. Tuy nhiên, sự khác biệt về điểm số kỹ năng tự học giữa các nhóm có thành tích khác nhau cho thấy sự ảnh hưởng của các yếu tố khác, chẳng hạn như đặc điểm cá nhân và bối cảnh bên ngoài, đối với kết quả học tập. Kết quả nghiên cứu nhấn mạnh tầm quan trọng của việc phát triển các kỹ năng tự học để cải thiện hiệu quả và kết quả học tập. Hơn nữa, nghiên cứu đề xuất một cách tiếp cận toàn diện trong việc đánh giá thành tích học tập, bao gồm các khía cạnh học tập mở rộng ngoài việc chỉ dựa vào thước đo GPA truyền thống. Những phát hiện này mang lại các gợi ý giá trị cho các nhà giáo dục và nhà hoạch định chính sách nhằm hỗ trợ sự phát triển của sinh viên trong giáo dục đại học.

Từ khóa: *Điểm trung bình, giáo dục đại học, sinh viên đại học, thành tích học tập, tự học.*

1. Introduction

In the rapidly evolving landscape of higher education, self-directed learning (SDL) is widely acknowledged as an essential skill. The growing need for lifelong learning and the capability to navigate complex, challenging, and unpredictable situations have made self-regulation of one's learning journey critical both in theory and practice (Garrison, 1997; Knowles, 1975). In higher education, this approach empowers students to define their objectives, choose their preferred methods and evaluate their performance against course goals (Candy, 1991). Furthermore, this skill is regarded as a core and valued quality in developing students with strong competencies. It not only fosters lifelong learning habits but also enhances skills in time management, creative thinking, and problem-solving (Benson, 2001).

Self-directed learning refers to a process in which an individual takes initiative concerning their educational needs, establishes their learning objectives, identifies essential resources for learning, applies suitable learning strategies, and assesses the outcome of their learning. In essence, SDL is defined as "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (Knowles, 1975, p.18).

Given this definition, SDL is more than just an approach to learning; it enables learners to take charge of their education and achieve success in their academic pursuits, aiding students in adjusting to changes more swiftly while enhancing their ability to learn more effectively, as it takes into account individual differences that exist among students. Furthermore, SDL assists students in discovering meaning and purpose in their lives. Self-directed learning is regarded as the cornerstone of all educational experiences (Candy, 1991; Knowles, 1975; Meyer & Turner, 2006; Williamson, 2007). Furthermore, Williamson (2007) emphasized that it is a key element that enables students to reach their highest level of academic success. The academic background of students, which includes prior grade point averages and Self-Directed Learning Readiness, was also recognized as an important determinant of academic performance in distance learning (Hsu & Shiue, 2005). Self-directed learning is vital in helping students evolve from passive recipients of information to active learners who take charge of their own coursework instead of depending on others (Perry et al., 2001).

Despite the substantial body of literature highlighting the value of SDL in fostering academic success and its critical role in various learning environments, the majority of previous research has mostly focused on online education contexts, particularly in Western countries (Hung et al., 2010; Naji et al., 2020; Widodo et al., 2020). Few studies have been conducted to explore the relationship between SDL and academic achievement in traditional, face-to-face undergraduate settings, especially within the cultural and educational context of Vietnam. Additionally, while previous studies have identified SDL as a predictor of academic readiness and success, they have not sufficiently examined the specific dimensions of SDL and how they individually and collectively influence academic achievement among undergraduate students in Vietnamese higher education institutions. This gap emphasizes the necessity of additional research to comprehend the distinct dynamics of SDL and how it affects academic achievement at Nong Lam University in Ho Chi Minh City. Therefore, the objective of this study is to investigate the relationship between self-directed learning and the academic achievement of undergraduate students at Nong Lam University, Ho Chi Minh City. Specifically, the study aims to identify how different SDL aspects influence students' academic performance, assess the strength of this relationship, and provide insights informing strategies to enhance academic achievement by encouraging SDL practices.

2. Review of Literature

Definition of Self-directed Learning

Self-directed learning encompasses a wide array of concepts which are defined differently across various literature sources. A commonly accepted definition by Knowles (1975) describes SDL as a process where individuals take the initiative, either with or without external assistance, to identify their learning needs, establish learning objectives, recognize available human and material resources, select and enact suitable learning strategies, and

assess learning outcomes. This emphasis on the process underscores the importance of learner agency and accountability throughout the educational experience. Certain definitions emphasize that this form of learning can take place not only within formal educational environments but also as an integral part of everyday life experiences. Regardless of the setting, SDL necessitates that learners engage actively, taking charge of their educational pursuits. This involvement might include recognizing their own learning requirements, determining learning goals, seeking out resources, choosing and utilizing learning strategies, and reflecting on their advancements.

Self-Directed Learning and Academic Achievement

Self-Regulated Learning Theory, Self-Determination Theory, and Social Cognitive Theory are the three main theories that explain the factors affecting student accomplishment, as represented in the nine clusters of the SDL questionnaire. The self-regulated learning theory (Zimmerman, 2000) places a strong emphasis on students' capacity to plan, monitor, and evaluate their learning processes. This theory also highlights how academic achievement is improved through self-management. Self-Determination Theory (Deci & Ryan, 1985), on the other hand, prioritizes intrinsic motivation, which is motivated by the satisfaction of psychological demands for autonomy, competence, and relatedness in order to promote a positive attitude toward learning and increase motivation and self-confidence. Last but not least, the Social Cognitive Theory (Bandura, 1986) illustrates how students' self-efficacy promotes their learning responsibility and perseverance in taking advantage of learning opportunities. When taken as a whole, these theories offer an efficient framework for comprehending the ways in which behavioral, motivational, and cognitive factors influence student achievement.

A considerable amount of research has investigated the relationship between SDL and academic success, examining how this approach influences students' ability to achieve their educational goals. Findings indicate that individuals who possess a well-developed capacity for SDL often achieve better academic outcomes. The study by Demir and İlhan (2022) used a mixed-methods explanatory sequential design, revealed a notable positive relationship between SDL and academic performance among students engaged in online education. The researchers contrasted online distance learners with those attending traditional universities. The results indicated a more robust correlation between SDL and academic success among the online distance learning group. This difference is likely due to the greater need for self-direction that is often found in online learning settings, where students must take more responsibility for their education. This suggests that SDL competencies are vital for academic achievement, especially in contexts that require students to oversee their own learning. Subekti (2021) and Altinpulluk et al. (2023) examined the relationship between SDL and academic resilience in online learning contexts, particularly among university students in Indonesia and Turkey. These researchers underscored the significance of SDL abilities, such as setting goals, managing resources, and conducting self-evaluations, for student success in demanding educational situations. However, the study's findings may have limited generalizability as it focuses on Indonesian L2 learners in online classes, making it difficult to apply to broader student populations. Furthermore, research by Kan'an & Osman (2015) used a random sample of 83 Qatari secondary school students, measuring SDL readiness with the Self-Directed Learning Readiness Scale (SDLRS) and science achievement through National Exam scores, with regression analysis to determine their relationship. Its findings indicated a significant connection between students' readiness for self-directed learning and their performance in science. Therefore, enhancing SDL skills could play a key role in improving academic results.

Various other research findings indicate that SDL equips students with crucial skills necessary for academic achievement, including self-regulation, self-efficacy, and motivation. Boyer and Kelly (2005) stated that students who possess more robust SDL skills are more adept at utilizing the knowledge they have gained in real-world situations. Furthermore, various studies, such as those conducted by Tuksinvarajarn (2002), revealed a strong link between elevated self-directed learning readiness (SDLR) scores and improved academic outcomes. In addition, offering students more chances to enhance their SDL skills has been demonstrated to

have a beneficial effect on their overall academic performance. Students who show higher levels of SDL frequently achieve greater academic success due to their initiative in learning, clearly defined goals, and application of efficient learning strategies.

A number of researchers have also examined the key elements of SDL that influence academic performance. Ainon and Rosmaizura (2018) and Nyamubi (2016) pointed out that students with high achievement motivation are more likely to manage their study time effectively and strive towards their academic objectives. A strong enthusiasm for learning encourages students to seek out academic resources from various channels and engage deeply with the material, which boosts their academic performance. A positive academic self-concept enables students to believe in their potential for success, which in turn supports self-directed learning behaviors and results in improved academic outcomes. Collectively, these factors enhance students' capability to take charge of their own learning journey, thereby leading to better academic achievement.

In conclusion, the existing literature robustly indicates a favorable relationship between self-directed learning and academic achievement. This connection appears to be especially strong in online distance learning environments. Notably, SDL aids in the development of crucial skills necessary for academic success, such as self-regulation, self-efficacy, and motivation. It is crucial to recognize that the association between self-directed learning and academic achievement is intricate and can be affected by a range of factors, including the student's prior knowledge, motivation levels, and the learning environment. Despite the recognized link between SDL and academic achievement, further investigation into this relationship across various learning contexts remains necessary.

3. Methodology

3.1. Research Design

This study used a quantitative approach, employing a survey to gather data from a sample of 8472 undergraduate students at Nong Lam University. The survey method was selected for its effectiveness in collecting data from a large number of participants, enabling the identification of patterns and relationships between variables.

3.2. Instrumentation

The research instrument was divided into two distinct sections for clarity and comprehensive data collection. The first section utilized the Self-Directed Learning Skills Scale (SDLSS), originally developed by Ayyildiz and Tarhan (2015), to assess various dimensions of self-directed learning. This section of the questionnaire was grouped into nine subscales: Attitude towards learning (4 items); Learning responsibility (3 items); Motivation and self-confidence (4 items); Planning ability for learning (5 items); Utilizing learning opportunities (3 items); Managing information (5 items); Applying learning strategies (5 items); Assessing the learning process (6 items); and Evaluating learning success/results (5 items). Each item was rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), with higher scores indicating a stronger orientation towards self-directed learning. To adapt the SDLSS for the Vietnamese context, a systematic process was implemented. The original scale was translated into Vietnamese by bilingual experts and then back-translated into English for accuracy verification. A pilot test with 50 undergraduate students was then conducted to identify any ambiguities or cultural discrepancies in the questionnaire items. Feedback from the pilot study led to modifications, ensuring the final questionnaire's reliability and cultural appropriateness. The second section of the questionnaire gathered demographic data along with academic achievement information. Academic achievement was operationalized using the Cumulative GPA (CGPA) from the most recent semester.

In the Self-Directed Learning Skills Scale (SDLSS), each item is rated on a 5-point Likert scale, where 1 represents "strongly disagree" and 5 implies "strongly agree." Subscale scores are obtained by summing the individual item scores within each subscale. For instance, the "Attitude towards Learning" subscale comprises 4 items, resulting in a total score that can range from 4 to 20. Similarly, the "Learning Responsibility" subscale includes 3 items, yielding scores from 3 to 15. The "Motivation and Self-Confidence" subscale consists of 4 items (range: 4-20), while the "Planning Ability for Learning"

subscale comprises 5 items (range: 5-25). The "Utilizing Learning Opportunities" subscale, with 3 items, has a score range of 3 to 15. Additionally, both the "Managing Information" and "Applying Learning Strategies" subscales contain 5 items each, with score ranging from 5 to 25. The "Assessing the Learning Process" subscale includes 6 items (range: 6-30), and the "Evaluating Learning Success/Results" subscale, with 5 items, has a range of 5-25. In every case, higher scores indicate a stronger orientation toward self-directed learning.

Overall, each student's SDL skills are quantified by summing the scores of all 40 items on the scale, resulting in a total score ranging from 40 to 200. A higher total score reflects a greater capacity for self-directed learning.

3.3. Data Analysis

Both descriptive and inferential statistical methods were used to analyze the relationship between self-directed learning and academic achievement. Descriptive statistics including means, standard deviations, and frequency were calculated for both Self-Directed Learning Skills sub-scale and academic achievement. Pearson correlation was conducted to assess the association between SDL scores and CGPA.

3.4. Respondents' profile

The information outlined in Table 1 gives a summary of the sample categorized by gender, academic year, and performance classification. In terms of gender representation, females comprise the largest group at 55.1%, totaling 4,671 students, while males make up 44.9% with 3,801 students. When considering the year of study, third-year students represent the biggest segment at 28.8% of the total, followed by second-year students at 24.4% and first-year students at 23.7%. Fourth-year students account for 16.3%, those in their fifth year represent 4.6%, and students in their sixth year or later constitute just 2.2%. Regarding academic performance, nearly half of the participants, 49.4%, are rated as "Good," while 26.7% are classified as "Average." Additionally, 13.8% are rated as "Very good," with only 3.0% achieving an "Excellent" rating, and 7.1% being categorized as "Below average."

Table 1. The sample

		Count	%
Gender	Male	3801	44.9
	Female	4671	55.1
Year	First-year	2010	23.7
	Second-year	2064	24.4
	Third-year	2438	28.8
	Four-year	1380	16.3
	Fifth-year	392	4.6
	Sixth-year and above	188	2.2
Academic performance	Below average	599	7.1
	Average	2262	26.7
	Good	4179	49.4
	Very good	1166	13.8
	Excellent	257	3.0

4. Results and discussion

4.1. Descriptive Statistics of Nine Aspects of SDL

Table 2 presents descriptive statistics for different factors related to SDL Skills. The overall mean score of 141.9 (SD = 22.8) suggests that students generally demonstrate a good level of self-directed learning skills although there are individual variances. Among the subscales, the highest scores were observed in Assessing the Learning Process (ALP) (M = 23.1, SD = 4.4) and Evaluating Learning Success/Results (ELS) (M = 19.5, SD = 3.5), which indicates that students are relatively strong in reflecting on their learning progress and assessing their academic performance. Planning Ability for Learning (PL) (M = 18.9, SD = 3.6) and Managing Information (MI) (M = 18.5, SD = 3.7) showed moderate scores, reflecting that students have sufficient information management and organizational abilities to facilitate self-directed learning. However, poorer areas were identified in Using Learning Opportunities (ULO) (M = 11.4, SD = 2.2), Attitude Towards Learning (ATL) (M = 11.8, SD = 2.1), and Learning Responsibility (LR) (M = 11.9, SD = 2.0). These lower scores show that students can have trouble recognizing and utilizing available learning resources, maintaining a positive learning attitude, and taking full responsibility for their own learning process. Overall, while students show capabilities in reflection and evaluation, efforts to enhance their engagement with learning opportunities and sense of responsibility could help them grow self-directed learning development.

Table 2. Descriptive statistics of the nine aspects of SDL Skills

	Minimum	Maximum	Mean	Standard Deviation
ATL Attitude towards learning	3	15	11,8	2,1
LR Learning responsibility	3	15	11,9	2,0
MS Motivation and self-confidence	4	20	15,4	2,8
PL Ability to plan learning	5	25	18,9	3,6
ULO Ability to use learning opportunities	3	15	11,4	2,2
MI Ability to manage information	5	25	18,5	3,7
ALS Ability to apply learning strategies	4	20	15,8	2,9
ALP Assessment of learning process	6	30	23,1	4,4
ELS Evaluation of learning success/results	5	25	19,5	3,5
Self-Directed Learning Skills	38	185	141,9	22,8

4.2. SDL skills and gender

Table 3 illustrates the correlation between self-directed learning abilities of students and their gender. It is important to note that the mean score of male participants is somewhat higher (142.84) than that of female participants (141.08), indicating a minor advantage in SDL skills. However, the higher standard deviation for males (24.32) opposed to females (21.43) reflects that male students' SDL scores vary more, whereas female students have more stable ones. Despite the minor difference in mean scores, the t-value of 3.49 and the p-value of 0.00 confirm that this difference is statistically significant. Overall, while males score slightly higher on average in SDL, females show greater consistency in their scores, and the difference between these two groups is statistically meaningful.

Table 3. Self-directed learning skills and gender

	N	Mean	Std. Deviation	Std. Error Mean	t	Sig.
Male	3801	142.84	24.32	.39	3.49	0.00
Female	4671	141.08	21.43	.31		

4.3. SDL skills and academic achievement

Table 4. Means and standard deviations of self-directed learning skills score by academic performance

	N	Mean	Std. Deviation	Std. Error
Below average	599	139.6561	25.32462	1.03474
Average	2262	142.3161	24.55215	.51623
Good	4179	141.6717	22.21590	.34366
Very good	1166	142.7907	20.36754	.59647
Excellent	257	142.3735	19.05585	1.18867
Total	8463	141.8768	22.77528	.24757

Table 4, on the other hand, presents the means and standard deviations of self-directed learning (SDL) scores across different academic performance groups. Interestingly, students in the "Very Good" category had the highest mean SDL score (M = 142.79, SD = 20.37), closely followed by the Excellent group (M = 142.37, SD = 19.06). This suggests that students with higher academic performance tend to have stronger and more consistent SDL abilities. Another key factor to consider is that the SDL scores of the Average (M = 142.32, SD = 24.55) and Good (M = 141.67, SD = 22.22) groups are similar, with the exception of a slight but unexpected difference in which the Average group does better than the Good group. This minor inconsistency suggests that factors beyond SDL, such as learning strategies, motivation, or external support, may influence academic

achievement. The Below Average group, however, showed the biggest standard deviation and the lowest mean SDL score (M = 139.66, SD = 25.32), suggesting both weaker SDL capabilities and more variation in self-directed learning abilities within this group. The greater standard deviation indicates that while some students in this group still have strong SDL abilities, others have substantial difficulties. Overall, the findings reinforce the strong connection between academic success and SDL skills, with higher-achieving students exhibiting stronger SDL competencies. The little differences between the Good and Average groups, however, exhibits that academic performance is shaped by a combination of factors beyond SDL, including external influences and individual learning approaches.

4.4. Correlation among variables

The correlation analysis presented in Table 5 offers valuable insights into the relationships between academic success and self-directed learning skills. Specifically, academic performance shows weak correlations with every other variable, with the most substantial positive relationship observed with the Ability to Apply Learning Strategies at r = 0.087, alongside a weak negative correlation with the Ability to Manage Information at r = -0.053. Both relationships are significant at the $p < 0.01$ threshold. These results imply that academic performance, as indicated by CGPA, is not significantly affected by Self-Directed Learning Skills, suggesting that other elements, such as the quality of teaching, individual characteristics, or external factors, may have a greater influence.

On the other hand, the other variables demonstrate much stronger inter-correlations. Self-Directed Learning Skills reveal robust relationships with several factors, such as Motivation and Self-Confidence (r = 0.857), Ability to Plan Learning (r = 0.905), and Ability to Use Learning Opportunities (r = 0.886). Likewise, the Ability to Plan Learning and Assessment of Learning Process show strong correlations with various variables, including Motivation and Self-Confidence, Ability to Use Learning Opportunities, and Ability to Apply Learning Strategies.

It is noteworthy that Attitude Towards Learning shows moderate to strong relationships with variables like Motivation and Self-Confidence (r = 0.656) and Learning Responsibility (r = 0.686), underscoring the role of a positive attitude in fostering personal accountability and engagement in learning. Students who effectively evaluate their learning are also more proficient in applying methods and seizing opportunities, as evidenced by the strong correlations observed between Assessment of Learning Process and Ability to Apply Learning methods (r = 0.829) as well as Ability to Utilize Learning Opportunities (r = 0.764).

The traditional metrics for measuring academic achievement may not fully capture a student's learning capabilities or potential, as indicated by the weak correlations noted between CGPA and various learning-associated traits. This observation emphasizes the need for more holistic assessment approaches that take into account additional learning dimensions, such as self-direction, planning, and strategic thought.

Table 5. Among variables

		GPA4	ATL	LR	MS	PL	ULO	MI	ALS	ALP	ELS	SDLS
GPA4	Pearson Correlation	1	0,008	.050**	0,001	0,006	0,011	-.053**	.087**	.035**	.049**	0,018
	Sig. (2-tailed)		0,464	0,000	0,896	0,600	0,294	0,000	0,000	0,001	0,000	0,105
	N	8463	8463	8463	8463	8463	8463	8463	8463	8463	8463	8463
ATL	Pearson Correlation	0,008	1	.686**	.656**	.644**	.614**	.556**	.555**	.587**	.565**	.748**
	Sig. (2-tailed)	0,464		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	8463	8472	8472	8472	8472	8472	8472	8472	8472	8472	8472
LR	Pearson Correlation	.050**	.686**	1	.737**	.717**	.678**	.570**	.665**	.669**	.656**	.810**
	Sig. (2-tailed)	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	8463	8472	8472	8472	8472	8472	8472	8472	8472	8472	8472

MS	Pearson Correlation	0,001	.656**	.737**	1	.786**	.739**	.669**	.665**	.694**	.674**	.857**
	Sig. (2-tailed)	0,896	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	8463	8472	8472	8472	8472	8472	8472	8472	8472	8472	8472
PL	Pearson Correlation	0,006	.644**	.717**	.786**	1	.833**	.723**	.719**	.767**	.711**	.905**
	Sig. (2-tailed)	0,600	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000
	N	8463	8472	8472	8472	8472	8472	8472	8472	8472	8472	8472
ULO	Pearson Correlation	0,011	.614**	.678**	.739**	.833**	1	.748**	.729**	.764**	.713**	.886**
	Sig. (2-tailed)	0,294	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000
	N	8463	8472	8472	8472	8472	8472	8472	8472	8472	8472	8472
MI	Pearson Correlation	-.053**	.556**	.570**	.669**	.723**	.748**	1	.647**	.699**	.657**	.838**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000
	N	8463	8472	8472	8472	8472	8472	8472	8472	8472	8472	8472
ALS	Pearson Correlation	.087**	.555**	.665**	.665**	.719**	.729**	.647**	1	.829**	.783**	.846**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000
	N	8463	8472	8472	8472	8472	8472	8472	8472	8472	8472	8472
ALP	Pearson Correlation	.035**	.587**	.669**	.694**	.767**	.764**	.699**	.829**	1	.831**	.902**
	Sig. (2-tailed)	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000
	N	8463	8472	8472	8472	8472	8472	8472	8472	8472	8472	8472
ELS	Pearson Correlation	.049**	.565**	.656**	.674**	.711**	.713**	.657**	.783**	.831**	1	.857**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000
	N	8463	8472	8472	8472	8472	8472	8472	8472	8472	8472	8472
SDLS	Pearson Correlation	0,018	.748**	.810**	.857**	.905**	.886**	.838**	.846**	.902**	.857**	1
	Sig. (2-tailed)	0,105	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	
	N	8463	8472	8472	8472	8472	8472	8472	8472	8472	8472	8472

5. Conclusion

The findings of this study reveal that undergraduate students at Nong Lam University possess generally strong SDL skills. Significantly, students demonstrated particular strengths in the areas of assessing their learning process and evaluating learning success/results, indicating strong reflection and evaluation abilities. In contrast, lower scores in areas such as utilizing learning opportunities, attitude towards learning, and learning responsibility highlight potential areas for improvement. Gender comparisons reveal that while male students exhibit slightly higher SDL scores on average, female students tend to perform more consistently in their SDL capabilities.

The overall inter-correlations among SDL subscales showed considerable links between various dimensions of self-directed learning although there were weak correlations between CGPA and specific SDL dimensions. This suggests that traditional academic performance metrics like CGPA may not fully capture the wide range of skills that contribute to effective learning, underscoring the importance of a more comprehensive approach to student assessment.

In summary, the study highlights the critical SDL role in academic achievement. Enhancing these skills, especially in areas of planning, assessment, and evaluation, could be a useful way to raise academic outcomes. Additionally, the findings advocate for educational strategies that extend beyond traditional grading systems to include a broader evaluation of learning competencies.

Declaration of conflicting interest: The researchers declare that there is no conflict of interest regarding the publication of this study.

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