



Exploring Factors Influencing Learner Autonomy: An Empirical Study of High School Students in Cambodia

Sophorn Ngath ^{a*}, *Dara Eong* ^a

^a *Build Bright University, Battambang, Cambodia*

ABSTRACT

Education is essential for individual and national development, and the Ministry of Education, Youth, and Sport (MoEYS) in Cambodia is dedicated to enhancing education quality through fostering lifelong learning among both educators and students. Despite the emphasis on lifelong and autonomous learning within MoEYS's strategic framework, significant research gaps persist regarding the factors influencing learner autonomy. This study addresses these gaps by exploring the determinants of learner autonomy and evaluating their interactions and impacts. Utilizing a quantitative cross-sectional design, the research surveyed 411 high school students across 14 schools in five provinces of Cambodia. The study investigated various aspects of learner autonomy, such as goal-setting, self-monitoring, motivation, and resource-seeking, and examined their relationships with independent variables including teaching methods, cultural attitudes, parental support, and technological access. Findings reveal that self-regulation and monitoring, intrinsic motivation, and resource-seeking are key predictors of learner autonomy. Additionally, effective teaching methods, supportive cultural attitudes, and access to technology significantly enhance students' ability to learn autonomously. However, the study also identifies a negative correlation between grade level and motivation, suggesting that as students progress, their intrinsic motivation may decline. The research provides valuable insights and practical recommendations for educators, learners, parents, and policymakers. Educators are encouraged to integrate goal-setting and self-monitoring practices into their curricula, while learners should focus on setting personal goals and seeking additional resources. Parents are advised to support their children's autonomous learning, and policymakers are urged to promote professional development for educators, invest in technology, and foster supportive educational environments. These recommendations aim to improve learner autonomy and align with MoEYS's vision of fostering lifelong learning and adapting to the evolving educational landscape.

Keywords: *Lifelong Learning, Learner Autonomy, Motivation, Teaching Method, Parental Support, Influencing, Socio-Cultural*

1. Introduction

Education, in its formal, non-formal, and informal forms, plays a vital role in both individual and national development. The Ministry of Education, Youth, and Sport (MoEYS) is dedicated to enhancing education quality by fostering a culture of lifelong learning among teachers and school directors, supported by education personnel, teacher training institutions, and development partners. This commitment includes continuous professional development, the adoption of new teaching methods, and a focus on 21st-century skills to improve student learning outcomes (MoEYS, 2019)^[1]. Lifelong learning is essential for personal growth and adapting to evolving job market demands while ensuring inclusivity for vulnerable groups (MoEYS, 2023)^[2]. As globalization and technological advancements reshape the educational landscape, MoEYS aims to achieve UN Sustainable Development Goal 4 by 2030 and 2050, promoting inclusive, equitable, and quality education. To address skills gaps and support Cambodia's digital economy, the Ministry is collaborating with stakeholders to enhance skills training and integrate digital education, while also focusing on effective leadership and management of education officials (The Phnom Penh Post, 2021)^[3].

The Ministry of Education, Youth, and Sport (MoEYS) not only aims to foster a culture of lifelong learning among educational personnel but also places a strong emphasis on students. Promoting digital education, but not limited to, is a key component of their strategic plan for 2019–2023 to support students' lifelong learning (Ngath, S., Eong, D., & Ly, S., 2024)^[4]. Lifelong learning and autonomous learning are closely related, as students with greater autonomous learning capabilities are more likely to engage in lifelong learning practices. The ability to self-manage and direct one's own learning is positively linked to a commitment to continuous, self-motivated learning throughout life (Yurdakul, 2017)^[5]. According to Ngath and his colleagues (2024)^[4], eight essential elements of learner autonomy have been identified: setting learning goals, monitoring one's progress, maintaining motivation without supervision, actively seeking additional resources, choosing study topics, deciding on problem-solving approaches, planning to achieve learning goals, and reviewing and adjusting learning plans.

1.1 Research Gaps

Despite the extensive emphasis on lifelong learning and autonomous learning within the educational framework outlined by the Ministry of Education, Youth, and Sport (MoEYS), there remains a notable gap in research concerning the influencing factors of the various elements associated with these concepts. While the literature, such as that cited by Ngath et al. (2024)^[4], identifies key components of learner autonomy—such as goal setting, progress monitoring, and resource seeking—there is a lack of comprehensive studies exploring the specific factors that impact these elements. For instance, factors affecting students' motivation to learn independently or their ability to monitor their own progress are yet to be systematically investigated, leaving a significant void in understanding how these elements interact and influence one another.

Similarly, while MoEYS's strategic plans underscore the importance of developing student autonomy and digital education, there is an absence of targeted research examining the underlying factors that contribute to these educational objectives. The current body of work lacks a detailed analysis of how external factors, such as educational environment, technological access, and support systems, influence learners' abilities to set goals, seek additional resources, and engage in autonomous learning. Addressing these gaps through empirical studies could provide valuable insights into the dynamics of learner autonomy and enable more effective strategies for fostering lifelong learning in educational settings.

1.2 Research Objectives

The objectives of this study are of two folds: to investigate additional influencing factors on learner autonomy and to evaluate the interaction and relative impact of influencing factors on autonomous learning.

The previous research highlighted that while various factors significantly correlate with different aspects of learner autonomy – such as goal-setting, monitoring progress, and seeking resources (Ngath, S., Eong, D., & Ly, S., 2024)^[4] – there are gaps in understanding how other potentially influential factors, like socio-cultural influences and educational environments, affect these dimensions. The objective is to explore and identify additional predictors or contextual factors that may influence learners' abilities to set goals, monitor progress, and maintain motivation. This includes examining how cultural attitudes, community support, and the educational setting contribute to or hinder various aspects of learner autonomy.

Although several predictors have been found to significantly impact autonomous learning, such as self-monitoring, goal-setting, and seeking additional resources, the interplay between these factors and their relative contributions to overall learner autonomy remain unclear. This objective aims to evaluate how these factors interact with each other and their cumulative impact on learners' abilities to plan, execute, and adjust their learning strategies. By understanding these interactions, the research seeks to provide a more integrated view of the mechanisms driving learner autonomy and identify key areas for targeted interventions or educational improvements.

2. Theoretical Framework

Learner autonomy refers to the capacity of learners to take control of their own learning processes. It's a key concept in education that emphasizes self-directed learning, personal responsibility, and the development of independent learning skills. Several theories and frameworks underpin the concept of learner autonomy, and here are some of the most influential:

Self-Determination Theory: Self-Determination Theory (SDT), developed by Richard Ryan and Edward Deci from their discussions in 1977, provides valuable insights into human motivation by highlighting the importance of three fundamental psychological needs: competence, relatedness, and autonomy (O'Hara, 2017)^[6]. According to SDT, individuals are more likely to be motivated to learn and improve when these needs are met. Conversely, unmet needs can lead to diminished motivation, increased reliance on external rewards, and potential negative impacts on mental health (Sprouts, 2022)^[7]. In educational contexts, SDT emphasizes that addressing these needs can significantly enhance students' intrinsic motivation, despite the complexities involved. By effectively supporting these needs, educators can foster independent, self-motivated, and lifelong learners (Busch, 2024)^[8].

Constructivist Theory: Constructivism is a learning theory that emphasizes the active role of learners in constructing their own understanding (McLeod, 2024)^[9]. According to this theory, to fully grasp a concept, individuals must actively engage with it. This engagement involves modeling, transforming, and understanding how an object or idea is constructed (Piaget, 1964)^[10]. Constructivists argue that knowledge is acquired and meaning is derived from personal experiences (Sarbah, 2020)^[11]. Learning is viewed not merely as a stimulus-response phenomenon but as a dynamic process that involves self-regulation and the development of conceptual structures through reflection and abstraction (von Glasersfeld, 1995)^[12]. Essentially, students actively construct their knowledge by interacting with external stimuli and selecting what is relevant for their everyday lives. Consequently, learning is seen as a continuous and energetic process, rather than a passive reception of information (Woolfolk, 1993)^[13].

Humanistic Theory: Rogers asserts that learners are active contributors to their educational experiences rather than passive recipients of information. Educators can enhance the learning process by offering opportunities for exploration, experimentation, and self-discovery, tailored to each learner's unique needs and interests (McLeod, 2024)^[14]. In the context of learning, autonomy refers to the ability of learners to make their own choices and decisions, free from external pressures, while agency highlights their capacity to take initiative and pursue goals independently, emphasizing self-direction, personal responsibility, and the recognition of their own potential for change (McClain, 2024)^[15]. According to Maslow's hierarchy of needs, students who reach self-actualization demonstrate qualities such as self-acceptance, a democratic perspective, realism, ethical problem-solving, autonomy, privacy, a reflective sense of humor, and spontaneity. Here, autonomy involves making informed and voluntary decisions guided by one's personal values and principles (Dannen, 2021)^[16].

Transformative Learning Theory: Transformative learning emphasizes the development of autonomous and responsible thinking (McEwen, L., & Tilbury, D., 2009)^[17] as a crucial educational objective for adult learners. To achieve this, adult educators must align with learners' goals and objectives (Mezirow, 1997)^[18]. The concept of transformative learning can be broken down into three main categories: antecedents, processes, and outcomes. Key antecedents include cognitive and affective perspectives, democratic education principles, and inspiration. The process of transformative learning unfolds in three interrelated phases and culminates in various outcomes such as becoming an autonomous thinker, experiencing perspective transformation across psychological, convictional, behavioral, social, and emotional dimensions, and enhancing global competitiveness and social justice. Additionally, transformative learning is cyclical; if goals are not achieved, the process should be revisited and repeated. This comprehensive framework underpins the theoretical definition of transformative learning (Tsimane, T. A., & Downing, C., 2020)^[19].

Experiential Learning Theory: Experiential learning is based on the idea that the most effective way to learn is through actual experiences. These experiences help reinforce information and aid in retaining and recalling facts (WGU, 2020)^[20]. In other words, experiential learning is an educational approach that presents subject matter in a way that fosters deeper engagement, allowing the experience to resonate beyond the immediate moment (Naesgaard, 2011)^[21]. By actively participating in the four modes of the learning cycle: feeling, watching, thinking, and doing (Inchainge, 2024)^[22] – students become more aware of their responsibilities and capabilities, and take ownership of their learning process. This involvement helps them develop autonomous behavior both in and out of the classroom, as well as in the work environment (Boggu, A. T., & Sundarsingh, J., 2019)^[23]. For students to fully engage in experiential learning, a certain level of autonomy is necessary (The University of Texas at Austin, 2019)^[24].

Andragogy: Malcolm Shepherd Knowles was an American educator renowned for popularizing the term andragogy, which he used to denote adult education. Knowles defined andragogy as both the art and science of adult learning, suggesting that it encompasses any form of adult education (Pappas, 2013)^[25]. He argued that mature learners have distinct needs and characteristics that should inform course design (Pappas, 2014)^[26]. Knowles emphasized the importance of autonomy and self-direction in adult learners, asserting that “Adults must be involved in the planning and evaluation of their instruction.” He also noted that adults seek relevance and practicality in their learning experiences (Jones, 2023)^[27]. Given that a learner's autonomy can vary depending on the situation, educators should not assume that because a person has been self-directed in one context, they will automatically succeed in a new one. Orientation, support, and guidance may be necessary at the initial stages of a learning project (Merriam, 2001)^[28].

Critical Pedagogy: Critical pedagogy is a concept primarily developed by Brazilian educator and philosopher Paulo Freire, who outlined it in his book *Pedagogy of the Oppressed*, first published in English in 1970 (Brooks, 2023)^[29]. In the academic field, critical pedagogy is understood as a “philosophy of education that draws on critical theory” (Kincheloe, J., & Steinburg, S., 1997)^[30]. This perspective views teaching as a political activity, argues against the idea that knowledge is neutral, and emphasizes that teaching and learning are deeply connected to social justice and democratic principles (Giroux, 2007)^[31]. Engaging in activities that promote critical thinking can make classes more dynamic and focused on the needs of learners, enhancing their intellectual growth and encouraging them to take more responsibility for their learning (Veettil, R., & Mathew, B. P., 2022)^[32].

Sociocultural Theory: Sociocultural theory is a framework in sociology and psychology that emphasizes the role of culture and society in the development and shaping of individuals. This theory illustrates how interactions with friends, parents, and other societal members influence cognitive, learning, and sociocultural functions (Structural Learning, 2023)^[33]. A key concept within this theory, introduced by Vygotsky, is the zone of proximal development (ZPD). Vygotsky defines the zone of actual development as the level at which children can solve problems independently, while the ZPD represents the cognitive level at which children can solve problems with the help of a more knowledgeable person (Moreno, 2010)^[34]. Thus, practices like cooperative and collaborative learning are crucial in promoting learner autonomy and independent learning (Chowdhury, 2021)^[35].

3. Methodology

The study employed a quantitative research design using a cross-sectional approach. The variables focused on aspects of learner autonomy and their influencing factors. The population consisted of high school students from five provinces in Cambodia: Banteay Meanchey, Battambang, Pailin, Preah Vihear, and Takeo. Data were gathered at a single point in time to provide a snapshot of the current situation. A structured questionnaire was used as the primary data collection tool to ensure consistency and accuracy in measuring the relationships between learner autonomy and its influencing factors across this diverse population.

The variables under exploration were dependent and independent. The dependent variables were the eight aspects of learner autonomy, including: the ability to set one's own learning goals, the ability to monitor one's own progress toward these goals, the motivation to learn without direct supervision, the drive to seek additional resources to enhance learning, involvement in selecting study topics, decision-making in problem-solving or assignments, planning for autonomous learning, and reviewing and adjusting one's autonomous learning plan. The independent variables included several external factors that could influence learner autonomy, such as teaching methods, feedback from teachers, availability of school resources, access to technology, parental support and encouragement, cultural attitudes, emphasis on rote learning, belief in one's ability to learn independently, school performance, experience with autonomous learning, and confidence in autonomous learning. These variables were analyzed to determine their effects on students' development of autonomous learning skills.

The sampling method for this study involved selecting a representative sample from high schools across five provinces in Cambodia. A total of 14 high schools were chosen, encompassing a diverse mix of public and private institutions, with 12 public schools and 2 private schools included in the sample. The study surveyed 411 students from these schools, comprising 270 girls and 141 boys. This sampling approach aimed to ensure a broad representation of students from different educational settings and gender groups, thereby providing a comprehensive view of learner autonomy and its influencing factors across various high school environments.

Data were collected using a self-administered Google Form distributed through Messenger and Telegram. This method facilitated easy access and completion for participants, ensuring a broad and inclusive data collection process. Once collected, the data were analyzed using SPSS software, which provided robust tools for statistical analysis. The analysis employed a regression model to examine the relationships between learner autonomy and its influencing factors. This approach allowed for a detailed exploration of how various independent variables impacted the different aspects of learner autonomy, providing insights into the dynamics and interactions within the study's framework.

The study ensured validity and reliability through meticulous data handling and analysis procedures. The Case Processing Summary indicated that all 411 cases were valid, with no exclusions, ensuring a complete dataset for analysis. To assess reliability, the study used Cronbach's Alpha, which yielded a coefficient of .862 for the 29 items in the questionnaire. This high Cronbach's Alpha value signifies strong internal consistency among the items, confirming that the measurement tools used were reliable in capturing the constructs of interest. These measures collectively supported the robustness and accuracy of the study's findings.

4. Results

4.1 Influencing Factors on the Ability to Set One's Own Learning Goals

Based on the SPSS Model Summary for the regression analysis, where the ability to set one's own learning goals is the dependent variable (DV) and the other 24 predictors are the independent variables (IVs), the model demonstrates a moderately strong positive relationship with $R = 0.633$. The R-squared value (R^2) is 0.40, indicating that 40% of the variance in the dependent variable is explained by the independent variables. The Adjusted R-squared value is 0.363, which means that, after adjusting for the number of predictors, approximately 36.3% of the variance in the dependent variable is explained by the predictors.

Table 1: Model Summary of the Ability to Set One's Own Learning Goals

Model 1 R	R Square	Adjusted R Square	Std. Error of the Estimate
0.633	.400	.363	1.416

The analysis of variance (ANOVA) for the regression model 1 with "I can set my own learning goals" as the dependent variable reveals a highly significant result, with an F-value of 10.737 and a p-value less than 0.001. This indicates that the 24 predictors collectively have a strong effect on the ability to set learning goals.

Table 2: The Analysis of Variance 1 (ANOVA¹) for the Ability to Set Learning Goal

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	516.463	24	21.519	10.737***	.000
Residual	773.610	386	2.004		
Total	1290.073	410			

According to the coefficients obtained from SPSS, 5 out of the 24 predictors significantly impact the outcome of the ability to set one's own learning goals, as reflected in the variable "I can set my own learning goals." These significant predictors include the ability to monitor progress, intrinsic motivation to seek additional resources, attitudes toward setting and planning goals, teaching methods that promote independent learning, and the belief that autonomous learning positively affects academic performance.

The most notable predictor is the ability to monitor progress, with a regression coefficient (B) of 0.292 and a standardized coefficient (Beta) of 0.278, and a highly significant p-value less than 0.001. This indicates a strong association between effectively tracking progress and successfully setting and achieving learning goals. Additionally, setting specific goals and planning how to achieve them is also a key predictor, with a B of 0.180, Beta of 0.164, and a p-value of 0.003, highlighting the critical role of goal specificity and planning.

Other significant predictors include actively seeking additional resources, which has a B value of 0.126 and a Beta of 0.116, with a p-value of 0.042, and teaching methods that promote independent learning, with a B of 0.157 and a Beta of 0.187, and a p-value of 0.001. Both predictors contribute to the ability to set learning goals, though to a lesser extent compared to monitoring progress and goal setting. Lastly, the belief that autonomous learning positively affects academic performance shows a B of 0.144, Beta of 0.140, and a p-value of 0.020, indicating that this perception also significantly influences goal-setting abilities.

Table 3: The Coefficients of the Influencing Factors on the Ability to Set One's Own Learning Goals

Model 1	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	1.092	1.360		0.803	0.423
Age	0.110	0.070	0.081	1.578	0.115
Gender	-0.205	0.153	-0.055	-1.345	0.179
Grade Level	-0.182	0.114	-0.085	-1.599	0.111
Learning Pathways	0.089	0.101	0.038	0.889	0.375
Socioeconomic Status	-0.009	0.163	-0.002	-0.056	0.956
I can monitor my progress toward my learning goals.	0.292	0.056	0.278	5.269***	0.000
I feel motivated to learn even without direct supervision.	0.031	0.054	0.029	0.570	0.569
I actively seek additional resources to enhance my learning.	0.126	0.061	0.116	2.045*	0.042
I am involved in choosing the topics I study in my courses.	0.027	0.055	0.027	0.495	0.621
I decide how to approach solving problems or assignments.	0.024	0.056	0.023	0.424	0.672
I set specific goals for my learning and plan how to achieve them.	0.180	0.060	0.164	2.985	0.003
I regularly review and adjust my learning plans based on my progress.	-0.071	0.062	-0.066	-1.133	0.258
The teaching methods at my school promote independent learning.	0.157	0.049	0.187	3.234**	0.001
I receive regular feedback that helps me improve my learning strategies.	0.055	0.058	0.052	0.953	0.341
My school provides adequate resources (e.g., books, online materials) for self-directed learning.	-0.031	0.042	-0.037	-0.743	0.458
I have access to technology that supports my independent learning (e.g., computers, internet).	0.016	0.048	0.018	0.345	0.730
My parents support my efforts to learn independently.	0.018	0.054	0.019	0.332	0.740
My parents encourage me to set and achieve my own learning goals.	0.072	0.054	0.073	1.321	0.187
The cultural attitudes in my community support independent learning.	-0.090	0.058	-0.095	-1.560	0.120
There is a strong emphasis on rote learning in my educational environment.	0.025	0.037	0.032	0.682	0.495
I believe that my ability to learn autonomously positively affects my academic performance.	0.144	0.062	0.140	2.332*	0.020

I perform better in assignments and exams when I take charge of my own learning.	-0.019	0.063	-0.018	-0.297	0.767
My experiences with learner autonomy have increased my confidence in my abilities.	-0.109	0.067	-0.105	-1.618	0.106
I feel more capable of solving problems independently as a result of learning autonomously.	0.022	0.050	0.024	0.430	0.667

4.2 Influencing Factors on the Ability to Monitor One's Own Progress toward Learning Goals

In Model 2 of the data analysis, the focus shifts to understanding the factors that influence autonomous learning, particularly the ability to track one's own progress toward learning goals. The regression analysis, conducted using SPSS, uncovers a moderately strong positive relationship between the dependent variable and the predictors. The correlation coefficient (R) stands at 0.693, while the R-squared value is 0.481. This means that nearly 48.1% of the variation in the dependent variable can be attributed to the predictors included in the model. With an adjusted R-squared of 0.449, the model accounts for the number of predictors, and the standard error of the estimate is 1.254, indicating the average deviation between the observed and predicted values. This analysis provides a detailed view of how various factors contribute to autonomous learning, specifically self-monitoring.

Table 4: Model Summary of the Ability to Monitor the Progress of Learning Goals

Model 2	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.693	0.481	0.449	1.254

The analysis of variance (ANOVA) reveals key insights into the factors affecting the ability to monitor progress toward learning goals. The model shows a significant overall effect, evidenced by an F-value of 14.896 and a p-value of less than 0.001. This result indicates that the predictors together account for a considerable portion of the variability in the dependent variable. Specifically, the regression sum of squares is 562.030, with 24 degrees of freedom, yielding a mean square of 23.418. In contrast, the residual sum of squares, which represents the unexplained variation, is 606.822 with 386 degrees of freedom, resulting in a mean square of 1.572.

The total sum of squares for the model is 1168.852, which represents the total variability in the dependent variable. This analysis confirms that the predictors, significantly influence the ability to monitor learning progress. The high F-value and low significance level underscore the model's effectiveness in explaining variations in monitoring progress towards learning goals.

Table 5: The Analysis of Variance 2 (ANOVA²) for the Ability to Monitor Learning Goal

Model 2	Sum of Squares	df	Mean Square	F	Sig.
Regression	562.030	24	23.418	14.896***	.000
Residual	606.822	386	1.572		
Total	1168.852	410			

Examining the impact of predictors on the ability to monitor progress toward learning goals reveals significant findings, based on their p-values. Out of the 24 variables analyzed, four demonstrate a significant effect on the dependent variable. These include: "I can set my own learning goals" (B = 0.229, p < 0.001), "I actively seek additional resources to enhance my learning" (B = 0.208, p < 0.001), "I am involved in choosing the topics I study in my courses" (B = 0.171, p < 0.001), and "I regularly review and adjust my learning plans based on my progress" (B = 0.245, p < 0.001). These findings underscore the importance of these factors in effectively monitoring one's learning progress.

In contrast, other predictors, including age, gender, and socioeconomic status, do not exhibit a significant impact on the ability to monitor learning progress. Their p-values exceed the conventional significance threshold of 0.05, suggesting that these variables do not significantly contribute to variations in the dependent variable. This distinction highlights the critical role of specific self-regulation strategies over demographic factors in enhancing the ability to monitor learning progress.

Table 6: The Coefficients of the Influencing Factors on the Ability to Monitor Learning Goal Progress

Model 2	Unstandardized		Standardized		
	Coefficients		Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	1.917	1.202		1.594	0.112
Age	0.010	0.062	0.008	0.159	0.874
Gender	0.043	0.135	0.012	0.317	0.752
Grade Level	-0.119	0.101	-0.058	-1.180	0.239
Learning Pathways	-0.087	0.089	-0.039	-0.975	0.330
Socioeconomic Status	0.024	0.144	0.006	0.164	0.869
I can set my own learning goals.	0.229	0.044	0.241	5.269***	0.000
I feel motivated to learn even without direct supervision.	-0.043	0.048	-0.042	-0.888	0.375
I actively seek additional resources to enhance my learning.	0.208	0.054	0.201	3.870***	0.000
I am involved in choosing the topics I study in my courses.	0.171	0.048	0.182	3.593***	0.000
I decide how to approach solving problems or assignments.	0.072	0.049	0.073	1.471	0.142
I set specific goals for my learning and plan how to achieve them.	0.081	0.054	0.077	1.495	0.136
I regularly review and adjust my learning plans based on my progress.	0.245	0.054	0.240	4.557***	0.000
The teaching methods at my school promote independent learning.	-0.068	0.043	-0.085	-1.563	0.119
I receive regular feedback that helps me improve my learning strategies.	0.042	0.051	0.041	0.817	0.414
My school provides adequate resources (e.g., books, online materials) for self-directed learning.	0.025	0.037	0.031	0.674	0.501
I have access to technology that supports my independent learning (e.g., computers, internet).	-0.071	0.042	-0.083	-1.685	0.093
My parents support my efforts to learn independently.	0.020	0.048	0.022	0.410	0.682
My parents encourage me to set and achieve my own learning goals.	-0.079	0.048	-0.085	-1.642	0.101
The cultural attitudes in my community support independent learning.	0.001	0.051	0.001	0.015	0.988
There is a strong emphasis on rote learning in my educational environment.	0.007	0.032	0.010	0.231	0.818
I believe that my ability to learn autonomously positively affects my academic performance.	0.068	0.055	0.069	1.236	0.217
I perform better in assignments and exams when I take charge of my own learning.	-0.051	0.056	-0.051	-0.914	0.361
My experiences with learner autonomy have increased my confidence in my abilities.	0.073	0.060	0.074	1.227	0.221
I feel more capable of solving problems independently as a result of learning autonomously.	-0.054	0.044	-0.063	-1.219	0.224

4.3 Influencing Factors on the Motivation to Learn without Direct Supervision

The analysis of factors influencing students' motivation to learn without direct supervision, based on Model 3 extracted from SPSS, reveals significant findings. The model shows a moderately strong relationship between the predictors and the dependent variable, with an R-value of 0.641. This reflects a notable correlation between the factors affecting learners' autonomy and their motivation to learn independently. The R-squared value of 0.411 indicates that approximately 41.1% of the variability in motivation can be explained by the predictors included in the model. The Adjusted R Square value of 0.374 accounts for the number of predictors, suggesting that around 37.4% of the variance is explained when adjusting for degrees of freedom. The standard error of the estimate is 1.327, representing the average deviation between the observed and predicted values.

Table 7: Model Summary of the Motivation to Learn without Direct Supervision

Model 3	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.641	0.411	0.374	1.327

To further investigate the impact of various factors on learners' motivation, an analysis of variance (ANOVA) was conducted. The ANOVA results for the regression model, which examines factors influencing students' motivation to learn without direct supervision, show that the model is statistically significant. The regression analysis produced a sum of squares of 474.600 with 24 degrees of freedom, resulting in a mean square of 19.775. The residual sum of squares is 679.999 with 386 degrees of freedom, leading to a mean square of 1.762.

The model's F-statistic is 11.225, with a p-value of 0.000, demonstrating that the predictors significantly account for the variability in students' motivation to learn independently. This result suggests a strong and meaningful relationship between the predictors and the dependent variable, affirming the relevance of the factors included in the model. Additionally, the total sum of squares for the dependent variable is 1154.599 with 410 degrees of freedom. These values indicate that while the model explains a significant portion of the variability in the dependent variable, a considerable amount of variance remains unexplained.

Table 8: The Analysis of Variance 3 (ANOVA³) for the Motivation to Learn without Direct Supervision

Model 3	Sum of Squares	df	Mean Square	F	Sig.
Regression	474.600	24	19.775	11.225***	.000
Residual	679.999	386	1.762		
Total	1154.599	410			

To deeply see how each individual influencing factors impact the dependent variable – the motivation to learn without direct supervision – the regression analysis was applied, and it revealed several statistically significant predictors. Notably, Grade Level ($B = -0.220$, $p = 0.040$), seeking additional resources to enhance learning ($B = 0.239$, $p = 0.000$), involvement in choosing study topics ($B = 0.134$, $p = 0.009$), decision-making in problem-solving ($B = 0.118$, $p = 0.023$), and regular review and adjustment of learning plans ($B = 0.122$, $p = 0.036$) were significant. These coefficients indicate the direction and strength of their effects on motivation. For instance, the negative coefficient for Grade Level suggests a decrease in motivation as grade level increases, whereas the positive coefficients for seeking additional resources and involvement in learning choices indicate a corresponding increase in motivation.

In contrast, other predictors such as age ($B = -0.080$, $p = 0.224$), gender ($B = -0.097$, $p = 0.500$), socioeconomic status ($B = -0.111$, $p = 0.466$), and various aspects of learner autonomy and support did not show statistically significant effects. This lack of significance suggests that while these factors may influence motivation, their impact is not as pronounced as the significant predictors identified. The findings highlight the importance of specific practices related to learner autonomy and self-regulation in enhancing students' motivation to learn independently, providing valuable insights for educational strategies aimed at promoting autonomous learning.

Table 9: The Coefficients of the Influencing Factors on the Motivation to Learn without Direct Supervision

Model 3	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	5.760	1.242		4.636***	0.000
Age	-0.080	0.066	-0.062	-1.217	0.224
Gender	-0.097	0.143	-0.027	-0.675	0.500
Grade Level	-0.220	0.107	-0.108	-2.062*	0.040

Learning Pathways	-0.052	0.094	-0.023	-0.548	0.584
Socioeconomic Status	-0.111	0.153	-0.030	-0.730	0.466
I can set my own learning goals.	0.027	0.048	0.029	0.570	0.569
I can monitor my progress toward my learning goals.	-0.048	0.054	-0.048	-0.888	0.375
I actively seek additional resources to enhance my learning.	0.239	0.057	0.233	4.221***	0.000
I am involved in choosing the topics I study in my courses.	0.134	0.051	0.143	2.630	0.009
I decide how to approach solving problems or assignments.	0.118	0.052	0.121	2.282*	0.023
I set specific goals for my learning and plan how to achieve them.	0.102	0.057	0.098	1.791	0.074
I regularly review and adjust my learning plans based on my progress.	0.122	0.058	0.121	2.103*	0.036
The teaching methods at my school promote independent learning.	0.010	0.046	0.013	0.219	0.827
I receive regular feedback that helps me improve my learning strategies.	0.013	0.054	0.013	0.237	0.813
My school provides adequate resources (e.g., books, online materials) for self-directed learning.	0.052	0.039	0.065	1.330	0.184
I have access to technology that supports my independent learning (e.g., computers, internet).	-0.083	0.045	-0.098	-1.867	0.063
My parents support my efforts to learn independently.	0.030	0.051	0.033	0.591	0.555
My parents encourage me to set and achieve my own learning goals.	0.040	0.051	0.043	0.786	0.432
The cultural attitudes in my community support independent learning.	-0.058	0.054	-0.065	-1.077	0.282
There is a strong emphasis on rote learning in my educational environment.	-0.002	0.034	-0.003	-0.061	0.952
I believe that my ability to learn autonomously positively affects my academic performance.	-0.011	0.058	-0.011	-0.190	0.850
I perform better in assignments and exams when I take charge of my own learning.	0.068	0.059	0.069	1.160	0.247
My experiences with learner autonomy have increased my confidence in my abilities.	0.130	0.063	0.132	2.067*	0.039
I feel more capable of solving problems independently as a result of learning autonomously.	-0.043	0.047	-0.051	-0.912	0.362

4.4 Influencing Factors on the Motivation to Seek Additional Resource to Enhance Learning

Regarding the motivation to seek additional resources to enhance learning, the model summary of the regression analysis indicates significant influence from the independent variables on the dependent variable. The model has a correlation coefficient (R) of 0.723, indicating a strong relationship between the predictors and the outcome variable. The R Square (R^2) value of 0.522 shows that approximately 52.2% of the variance in the dependent variable can be explained by the model. The Adjusted R Square, which accounts for the number of predictors and sample size, is 0.493, suggesting a slight reduction in explanatory power when adjusting for these factors. The standard error of the estimate is 1.167, reflecting the average distance that the observed values fall from the regression line.

Table 10: Model Summary of the Motivation to Seek Additional Resource

Model 4	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.723	0.522	0.493	1.167

Based on the analysis of variance for the regression model 4 which examines factors influencing the motivation to seek additional resources for enhancing learning, the regression accounts for a Sum of Squares of 574.936 with 24 degrees of freedom, yielding a Mean Square of 23.956. In contrast, the Residual component has a Sum of Squares of 525.492 with 386 degrees of freedom and a Mean Square of 1.361. This represents the variation in the dependent variable not explained by the model. The Total Sum of Squares is 1100.428, calculated over 410 degrees of freedom, which includes both explained and unexplained variance.

This component of the model is associated with an F-statistic of 17.597 and a significance level (Sig.) of 0.000, indicating that the model's predictors significantly contribute to explaining the variance in the dependent variable, "I actively seek additional resources to enhance my learning." The significance level confirms that the relationship between the predictors and the outcome variable is statistically significant.

Table 11: The Analysis of Variance 4 (ANOVA⁴) for the Motivation to Seek Additional Resource

Model 4		Sum of Squares	df	Mean Square	F	Sig.
	Regression	574.936	24	23.956	17.597***	.000
	Residual	525.492	386	1.361		
	Total	1100.428	410			

According to the coefficients of each individual variable, there are at least 6 factors significantly impact the motivation to seek additional resources for enhancing learning. Specifically, "I can monitor my progress toward my learning goals" (B = 0.180, p < 0.001), "I feel motivated to learn even without direct supervision" (B = 0.185, p < 0.001), "I am involved in choosing the topics I study in my courses" (B = 0.208, p < 0.001), and "I can set my own learning goals" (B = 0.085, p = 0.042) all show significant positive relationships with the dependent variable, indicating their strong influence on the outcome.

Other factors, including age, gender, grade level, socioeconomic status, and several aspects related to learning goals, feedback, and resource availability, do not significantly impact the outcome, as their p-values exceed the conventional significance threshold of 0.05. Notably, parental support and encouragement also have significant effects, with "My parents support my efforts to learn independently" (B = -0.130, p = 0.003) and "My parents encourage me to set and achieve my own learning goals" (B = 0.092, p = 0.039) being significant predictors.

Table 12: The Coefficients of the Influencing Factors on the Motivation to Seek Additional Resource

Model 4	Unstandardized		Standardized		t	Sig.
	Coefficients	Std. Error	Beta			
(Constant)	-1.064	1.121			-0.949	0.343
Age	0.025	0.058	0.020		0.424	0.671
Gender	0.165	0.126	0.048		1.316	0.189
Grade Level	0.132	0.094	0.067		1.410	0.159
Learning Pathways	-0.027	0.083	-0.012		-0.322	0.747
Socioeconomic Status	-0.003	0.134	-0.001		-0.022	0.982
I can set my own learning goals.	0.085	0.042	0.092		2.045*	0.042
I can monitor my progress toward my learning goals.	0.180	0.046	0.185		3.870***	0.000
I feel motivated to learn even without direct supervision.	0.185	0.044	0.189		4.221***	0.000
I am involved in choosing the topics I study in my courses.	0.208	0.044	0.228		4.742***	0.000

I decide how to approach solving problems or assignments.	0.045	0.046	0.047	0.980	0.328
I set specific goals for my learning and plan how to achieve them.	0.071	0.050	0.070	1.416	0.158
I regularly review and adjust my learning plans based on my progress.	0.064	0.051	0.065	1.255	0.210
The teaching methods at my school promote independent learning.	0.072	0.040	0.092	1.774	0.077
I receive regular feedback that helps me improve my learning strategies.	0.045	0.048	0.045	0.940	0.348
My school provides adequate resources (e.g., books, online materials) for self-directed learning.	-0.011	0.034	-0.015	-0.330	0.742
I have access to technology that supports my independent learning (e.g., computers, internet).	0.050	0.039	0.061	1.275	0.203
My parents support my efforts to learn independently.	-0.130	0.044	-0.149	-2.944**	0.003
My parents encourage me to set and achieve my own learning goals.	0.092	0.044	0.102	2.073*	0.039
The cultural attitudes in my community support independent learning.	-0.001	0.048	-0.001	-0.014	0.989
There is a strong emphasis on rote learning in my educational environment.	-0.040	0.030	-0.057	-1.338	0.182
I believe that my ability to learn autonomously positively affects my academic performance.	-0.010	0.051	-0.010	-0.193	0.847
I perform better in assignments and exams when I take charge of my own learning.	0.075	0.052	0.078	1.456	0.146
My experiences with learner autonomy have increased my confidence in my abilities.	-0.095	0.055	-0.099	-1.718	0.087
I feel more capable of solving problems independently as a result of learning autonomously.	0.018	0.041	0.022	0.440	0.660

4.5 Influencing Factors on the Involvement in Choosing Topics for Study

In regard to learners' involvement in choosing their study topic, the correlation coefficient (R) is 0.703 showing a strong relationship between the predictors and the outcome variable. The R Square (R^2) value of 0.494 reveals that approximately 49.4% of the variability in this outcome can be explained by the model. The Adjusted R Square of 0.463, which adjusts for the number of predictors, suggests that about 46.3% of the variance is explained when accounting for model complexity. The standard error of the estimate is 1.315, reflecting the average deviation of observed values from the predicted values.

Table 13: Model Summary of the Involvement in Choosing Topics for Study

Model 5	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.703	0.494	0.463	1.315

The analysis of variance (ANOVA) evaluates the impact of various predictors on students' involvement in choosing their study topics. The regression model explains a significant portion of this variance, with a Sum of Squares of 652.634 across 24 degrees of freedom, yielding a Mean Square of 27.193. In comparison, the Residual Sum of Squares is 667.950 with 386 degrees of freedom, yielding a Mean Square of 1.730. This residual variance represents the portion of the outcome that the model does not explain. The Total Sum of Squares, which combines both explained and unexplained variance, is 1320.584 with 410 degrees of freedom.

While the F-statistic is calculated to be 15.715 yielding a significance level (Sig.) of 0.000. This indicates that the predictors collectively have a statistically significant effect on the outcome variable. This high F-value and low p-value suggest that the model is effective in explaining the variability in students' engagement in selecting their study topics.

Table 14: The Analysis of Variance 5 (ANOVA⁵) for the Students' Involvement in Choosing Topics for Their Study

Model 5	Sum of Squares	df	Mean Square	F	Sig.
Regression	652.634	24	27.193	15.715***	.000
Residual	667.950	386	1.730		
Total	1320.584	410			

In regard to the analysis of the coefficients, the data reveals several significant factors influencing students' involvement in choosing their study topics. Notably, "I can monitor my progress toward my learning goals" has a strong positive effect with a coefficient of 0.189 and a p-value of 0.000, indicating that greater self-monitoring of learning progress is associated with increased involvement in topic selection. Similarly, "I feel motivated to learn even without direct supervision" also significantly influences involvement, with a coefficient of 0.132 and a p-value of 0.009, suggesting that intrinsic motivation plays a key role. Another important factor is "I actively seek additional resources to enhance my learning," which shows a strong positive impact with a coefficient of 0.265 and a p-value of 0.000, highlighting the importance of resource-seeking behavior in topic selection.

Additional significant factors include "I set specific goals for my learning and plan how to achieve them," with a coefficient of 0.180 and a p-value of 0.001, emphasizing the importance of goal-setting and planning. "I receive regular feedback that helps me improve my learning strategies" also significantly impacts involvement, with a coefficient of 0.120 and a p-value of 0.026, indicating that feedback is crucial for enhancing engagement in choosing study topics. "The cultural attitudes in my community support independent learning" further influences involvement, with a coefficient of 0.118 and a p-value of 0.028, underscoring the role of cultural support in fostering student engagement in topic selection. Finally, "There is a strong emphasis on rote learning in my educational environment" also the other influencing factor to learners' involvement in choosing their study topics, with a coefficient of 0.109 and a p-value of 0.001, indicating that rote learning is associated with increased involvement in topic selection.

Table 15: The Coefficients of Influencing Factors on Learners' Involvement in Choosing Their Study Topics

Model 5	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	-3.098	1.255			-2.468	0.014
Age	0.091	0.065	0.067		1.408	0.160
Gender	0.080	0.142	0.021		0.563	0.574
Grade Level	0.081	0.106	0.037		0.765	0.445
Learning Pathways	0.125	0.093	0.053		1.340	0.181
Socioeconomic Status	-0.220	0.151	-0.054		-1.454	0.147
I can set my own learning goals.	0.023	0.047	0.023		0.495	0.621
I can monitor my progress toward my learning goals.	0.189	0.053	0.178		3.593***	0.000
I feel motivated to learn even without direct supervision.	0.132	0.050	0.123		2.630**	0.009
I actively seek additional resources to enhance my learning.	0.265	0.056	0.241		4.742***	0.000
I decide how to approach solving problems or assignments.	-0.001	0.052	-0.001		-0.012	0.991
I set specific goals for my learning and plan how to achieve them.	0.180	0.056	0.161		3.210**	0.001
I regularly review and adjust my learning plans based on my progress.	-0.014	0.058	-0.013		-0.250	0.803
The teaching methods at my school promote independent learning.	-0.050	0.046	-0.058		-1.088	0.277

I receive regular feedback that helps me improve my learning strategies.	0.120	0.054	0.111	2.240*	0.026
My school provides adequate resources (e.g., books, online materials) for self-directed learning.	0.030	0.039	0.035	0.780	0.436
I have access to technology that supports my independent learning (e.g., computers, internet).	0.011	0.044	0.012	0.250	0.803
My parents support my efforts to learn independently.	0.010	0.050	0.010	0.192	0.848
My parents encourage me to set and achieve my own learning goals.	-0.030	0.050	-0.031	-0.605	0.546
The cultural attitudes in my community support independent learning.	0.118	0.053	0.122	2.205*	0.028
There is a strong emphasis on rote learning in my educational environment.	0.109	0.034	0.140	3.262**	0.001
I believe that my ability to learn autonomously positively affects my academic performance.	-0.079	0.058	-0.076	-1.368	0.172
I perform better in assignments and exams when I take charge of my own learning.	0.067	0.058	0.064	1.156	0.248
My experiences with learner autonomy have increased my confidence in my abilities.	-0.040	0.063	-0.038	-0.635	0.526
I feel more capable of solving problems independently as a result of learning autonomously.	0.006	0.047	0.006	0.125	0.901

4.6 Influencing Factors on Decision to Approach Problem-Solving or Assignment

In regard to the decision to approach solving problem and assignment, the model summary reveals how well various predictors account for the outcome within the context of learner autonomy. The model has a correlation coefficient (R) of 0.681, indicating a strong relationship between the predictors and the decision-making process. The R Square value of 0.463 means that approximately 46.3% of the variance in decision-making about problem-solving and assignments is explained by the model. The Adjusted R Square of 0.430 adjusts this percentage for the number of predictors, providing a refined measure of explanatory power. The standard error of the estimate is 1.298, representing the average deviation between the observed and predicted values.

Table 16: Model Summary of Decision to Approach Problem-Solving or Assignment

Model 6	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.681	0.463	0.430	1.298

Based on the ANOVA assessment of the impact of various predictors on how learners decide to approach solving problems and assignments, the regression model explains a significant portion of the variance in this decision-making process. The Sum of Squares for the regression is 561.685, with 24 degrees of freedom, leading to a Mean Square of 23.404. In contrast, the Residual Sum of Squares is 650.232, with 386 degrees of freedom, resulting in a Mean Square of 1.685. This residual variance represents the portion of the outcome that the model does not explain. The Total Sum of Squares is 1211.917, encompassing both explained and unexplained variance.

The F-statistic of 13.893, with a significance level (Sig.) of 0.000, demonstrates that the predictors have a statistically significant effect on learners' approach to problem-solving and assignments. This high F-value signifies that the overall model, incorporating various predictors, is effective in explaining how learners decide to tackle problems and assignments. The extremely low p-value (0.000) confirms that the relationship between the predictors and the decision-making process is highly significant, ruling out the possibility that these results are due to chance.

Table 17: The Analysis of Variance 6 (ANOVA⁶) for the Influencing Factors on Learners' Approach to Problem-Solving and Assignment

Model 6		Sum of Squares	df	Mean Square	F	Sig.
	Regression	561.685	24	23.404	13.893***	.000
	Residual	650.232	386	1.685		
	Total	1211.917	410			

In the analysis of factors influencing learners' decisions on how to approach solving problems and assignments, several predictors show significant effects based on both unstandardized and standardized coefficients. The variable "I feel motivated to learn even without direct supervision" has a significant positive impact with an unstandardized coefficient (B) of 0.113, a standardized coefficient (Beta) of 0.110, and a p-value of 0.023. "I set specific goals for my learning and plan how to achieve them" also significantly affects the decision-making process, with an unstandardized coefficient of 0.181, a standardized coefficient of 0.169, and a p-value of 0.001. Additionally, "I have access to technology that supports my independent learning" shows a significant effect with an unstandardized coefficient of 0.126, a standardized coefficient of 0.145, and a p-value of 0.004.

Other significant factors include "The cultural attitudes in my community support independent learning," with an unstandardized coefficient of -0.114, a standardized coefficient of -0.124, and a p-value of 0.031, and "I believe that my ability to learn autonomously positively affects my academic performance," with an unstandardized coefficient of 0.134, a standardized coefficient of 0.135, and a p-value of 0.018. These results underscore the importance of motivation, goal-setting, access to technology, cultural support, and personal belief in autonomy in shaping learners' approaches to problem-solving and assignments. Factors such as age, gender, and socioeconomic status did not show significant effects in this model.

Table 18: The Coefficients of Influencing Factors on Learners' Decision to Approach Problem-Solving and Assignment

Model 6	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	-1.189	1.247		-0.954	0.341
Age	0.059	0.064	0.045	0.925	0.356
Gender	-0.151	0.140	-0.042	-1.076	0.283
Grade Level	0.043	0.105	0.021	0.412	0.680
Learning Pathways	-0.022	0.092	-0.010	-0.239	0.811
Socioeconomic Status	0.060	0.149	0.016	0.404	0.687
I can set my own learning goals.	0.020	0.047	0.020	0.424	0.672
I can monitor my progress toward my learning goals.	0.077	0.053	0.076	1.471	0.142
I feel motivated to learn even without direct supervision.	0.113	0.049	0.110	2.282*	0.023
I actively seek additional resources to enhance my learning.	0.055	0.057	0.053	0.980	0.328
I am involved in choosing the topics I study in my courses.	-0.001	0.050	-0.001	-0.012	0.991
I set specific goals for my learning and plan how to achieve them.	0.181	0.055	0.169	3.273**	0.001
I regularly review and adjust my learning plans based on my progress.	0.087	0.057	0.084	1.528	0.127
The teaching methods at my school promote independent learning.	0.085	0.045	0.104	1.885	0.060
I receive regular feedback that helps me improve my learning strategies.	0.067	0.053	0.065	1.271	0.204

My school provides adequate resources (e.g., books, online materials) for self-directed learning.	-0.009	0.038	-0.011	-0.245	0.806
I have access to technology that supports my independent learning (e.g., computers, internet).	0.126	0.043	0.145	2.911**	0.004
My parents support my efforts to learn independently.	-0.042	0.050	-0.046	-0.851	0.396
My parents encourage me to set and achieve my own learning goals.	0.019	0.050	0.020	0.376	0.707
The cultural attitudes in my community support independent learning.	-0.114	0.053	-0.124	-2.165	0.031
There is a strong emphasis on rote learning in my educational environment.	0.063	0.033	0.084	1.874	0.062
I believe that my ability to learn autonomously positively affects my academic performance.	0.134	0.056	0.135	2.371*	0.018
I perform better in assignments and exams when I take charge of my own learning.	0.004	0.058	0.004	0.073	0.942
My experiences with learner autonomy have increased my confidence in my abilities.	0.026	0.062	0.026	0.428	0.669
I feel more capable of solving problems independently as a result of learning autonomously.	0.071	0.046	0.081	1.539	0.125

4.7 Influencing Factors on Planning for Autonomous Learning

Extracted from SPSS, the model summary for the analysis of factors influencing goal-setting and planning for autonomous learning reveals a robust relationship between the predictors and the outcome variable. The model demonstrates a strong correlation with an R value of 0.703, indicating a substantial connection between the predictors and how learners set and plan their learning goals. The R^2 value of 0.495 suggests that approximately 49.5% of the variance in learners' goal-setting and planning for autonomous learning can be explained by the model. The Adjusted R^2 value of 0.463 accounts for the number of predictors and sample size, indicating that after adjustment, around 46.3% of the variance is explained, reflecting a slightly reduced explanatory power. The standard error of the estimate is 1.181, indicating the average distance between the observed values and the predicted values from the model. This level of precision suggests that the model provides a reasonably accurate representation of the factors affecting learners' goal-setting and planning for autonomous learning.

Table 19: Model Summary of Planning for Autonomous Learning

Model 7	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.703	0.495	0.463	1.181

While the ANOVA results for the model on factors influencing learners' ability to set specific goals and plan how to achieve them indicate that the predictors collectively have a significant effect on this process. The regression model explains a substantial portion of the variance in goal-setting and planning, with a Sum of Squares of 526.697 across 24 degrees of freedom and a Mean Square of 21.946. However, the residuals, which account for the remaining unexplained variance (538.062), suggest that there are additional factors not included in the model that may also impact learners' goal-setting and planning abilities. The total variance explained by the model, including the regression and residual components, is substantial, with a Total Sum of Squares of 1064.759.

The F-statistic of 15.744, with a significance level (Sig.) of 0.000, confirms that the model's predictors significantly impact the outcome variable. This result underscores the effectiveness of the predictors, such as self-perceived problem-solving capability, goal-setting ability, and external support, in explaining how learners set and plan their learning goals. The significance of the F-statistic indicates that the predictors included in the model collectively offer a statistically significant explanation of the variance in learners' goal-setting and planning.

Table 20: The Analysis of Variance 7 (ANOVA⁷) for the Influencing Factors on Planning for Autonomous Learning

Model 7	Sum of Squares	df	Mean Square	F	Sig.
Regression	526.697	24	21.946	15.744***	.000
Residual	538.062	386	1.394		
Total	1064.759	410			

In the analysis of factors influencing learners' ability to set specific goals and plan how to achieve them, several significant predictors emerged. Notably, the ability to set personal learning goals positively impacts this process, with a coefficient of 0.125 and a p-value of 0.003, indicating a strong and statistically significant relationship. Additionally, involvement in choosing study topics and deciding how to approach problem-solving also significantly contribute to goal-setting and planning, with coefficients of 0.145 and 0.149, respectively, both with p-values of 0.001.

Regularly reviewing and adjusting learning plans based on progress is another key factor, demonstrating a substantial effect with a coefficient of 0.189 and a p-value of 0.000. These findings highlight that self-directed behaviors and active engagement in learning processes are crucial for effective goal-setting and planning. Other factors, such as the availability of resources, motivational aspects, and feedback, did not show significant effects in this context.

Table 21: The Coefficients of Influencing Factors on Learners' Planning for Autonomous Learning

Model 7	Unstandardized		Standardized		
	Coefficients		Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	1.118	1.134		0.986	0.325
Age	-0.036	0.058	-0.029	-0.615	0.539
Gender	0.088	0.128	0.026	0.691	0.490
Grade Level	0.054	0.095	0.028	0.569	0.570
Learning Pathways	-0.163	0.084	-0.077	-1.951	0.052
Socioeconomic Status	0.134	0.136	0.037	0.988	0.324
I can set my own learning goals.	0.125	0.042	0.138	2.985**	0.003
I can monitor my progress toward my learning goals.	0.071	0.048	0.075	1.495	0.136
I feel motivated to learn even without direct supervision.	0.081	0.045	0.084	1.791	0.074
I actively seek additional resources to enhance my learning.	0.073	0.051	0.074	1.416	0.158
I am involved in choosing the topics I study in my courses.	0.145	0.045	0.161	3.210**	0.001
I decide how to approach solving problems or assignments.	0.149	0.046	0.159	3.273**	0.001
I regularly review and adjust my learning plans based on my progress.	0.189	0.051	0.194	3.689***	0.000
The teaching methods at my school promote independent learning.	0.035	0.041	0.046	0.857	0.392
I receive regular feedback that helps me improve my learning strategies.	-0.038	0.048	-0.040	-0.797	0.426
My school provides adequate resources (e.g., books, online materials) for self-directed learning.	-0.037	0.035	-0.049	-1.073	0.284
I have access to technology that supports my independent learning (e.g., computers, internet).	0.064	0.040	0.079	1.609	0.108
My parents support my efforts to learn independently.	0.023	0.045	0.026	0.498	0.619
My parents encourage me to set and achieve my own learning goals.	0.033	0.045	0.037	0.725	0.469
The cultural attitudes in my community support independent learning.	0.006	0.048	0.007	0.129	0.898
There is a strong emphasis on rote learning in my educational environment.	-0.047	0.030	-0.066	-1.529	0.127

I believe that my ability to learn autonomously positively affects my academic performance.	-0.043	0.052	-0.046	-0.828	0.408
I perform better in assignments and exams when I take charge of my own learning.	-0.009	0.052	-0.009	-0.163	0.871
My experiences with learner autonomy have increased my confidence in my abilities.	0.102	0.056	0.109	1.827	0.069
I feel more capable of solving problems independently as a result of learning autonomously.	-0.049	0.042	-0.060	-1.170	0.243

4.8 Influencing Factors on Reviewing and Adjusting Autonomous Learning Plan

The Model Summary from SPSS indicates a strong correlation between the predictors and the dependent variable, which is how learners review and adjust their autonomous learning plans. With an R value of 0.735 and an R^2 of 0.541, the model accounts for 54.1% of the variance in learners' frequency and effectiveness in reviewing and adjusting their plans. The adjusted R^2 of 0.512, which adjusts for the number of predictors, suggests a good fit. The standard error of the estimate is 1.155, indicating the average deviation from the model's predictions. Significant predictors include factors related to learner autonomy and self-regulation, such as monitoring progress, setting and achieving learning goals, and actively seeking additional resources.

Table 22: Model Summary of Regularly Reviewing and Adjusting Plan

Model 8	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.735	0.541	0.512	1.155

Yet, the ANOVA results reveal that the regression model 8 significantly explains the variance in how learners regularly review and adjust their learning plans based on their progress. With a Sum of Squares of 605.535 across 24 degrees of freedom and a Mean Square of 25.231, the model demonstrates a substantial relationship between the predictors and the dependent variable. The residual Sum of Squares is 514.777, based on 386 degrees of freedom, and the Total Sum of Squares is 1120.311, with 410 degrees of freedom. This residual value reflects the variance not explained by the predictors in the model.

The F-statistic of 18.919, with a significance level of 0.000, indicates that the predictors collectively have a highly significant impact on this process, suggesting that the model effectively captures the factors influencing learners' review and adjustment of their learning plans. The significant predictors include various aspects of learner autonomy, such as the ability to monitor progress, set and achieve learning goals, and seek additional resources. These factors collectively contribute to the model's strong explanatory power regarding learners' behaviors in reviewing and adjusting their learning plans.

Table 23: The Analysis of Variance 8 (ANOVA⁸) for the Influencing Factors on Learners' Review and Adjustment of the Learning Plan

Model 8	Sum of Squares	df	Mean Square	F	Sig.
Regression	605.535	24	25.231	18.919***	.000
Residual	514.777	386	1.334		
Total	1120.311	410			

In the analysis of factors influencing how learners regularly review and adjust their learning plans, several predictors stand out as significant. Monitoring progress toward learning goals is a major positive influencer, with an unstandardized coefficient of 0.208 and a standardized coefficient (Beta) of 0.213, and a p-value of 0.000, indicating a strong relationship with the frequency and effectiveness of plan adjustments. Feeling motivated to learn without direct supervision also plays a significant role, showing a positive effect with a coefficient of 0.093 and a Beta of 0.094, significant at a p-value of 0.036.

Additionally, setting specific goals for learning and planning how to achieve them is a significant factor, with a coefficient of 0.180, Beta of 0.176, and a p-value of 0.000. Access to technology that supports independent learning also positively impacts this process, with a coefficient of 0.095 and a Beta of 0.113, significant at a p-value of 0.015. Encouragement from parents to set and achieve learning goals is another important predictor, with a coefficient of 0.096 and a Beta of 0.106, significant at a p-value of 0.030. Finally, belief in the positive impact of autonomous learning on academic performance is significant, with a coefficient of 0.125, Beta of 0.130, and a p-value of 0.014. These factors collectively contribute to learners' effectiveness in reviewing and adjusting their learning plans.

Table 24: The Coefficients of Influencing Factors on Learners' Review and Adjustment of Their Learning Plan

Model 8	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
	(Constant)	-0.280	1.111		-0.252
Age	-0.048	0.057	-0.038	-0.843	0.400
Gender	-0.071	0.125	-0.020	-0.568	0.570
Grade Level	0.091	0.093	0.045	0.973	0.331
Learning Pathways	0.020	0.082	0.009	0.241	0.809
Socioeconomic Status	0.085	0.133	0.023	0.636	0.525
I can set my own learning goals.	-0.047	0.041	-0.050	-1.133	0.258
I can monitor my progress toward my learning goals.	0.208	0.046	0.213	4.557***	0.000
I feel motivated to learn even without direct supervision.	0.093	0.044	0.094	2.103*	0.036
I actively seek additional resources to enhance my learning.	0.063	0.050	0.063	1.255	0.210
I am involved in choosing the topics I study in my courses.	-0.011	0.045	-0.012	-0.250	0.803
I decide how to approach solving problems or assignments.	0.069	0.045	0.072	1.528	0.127
I set specific goals for my learning and plan how to achieve them.	0.180	0.049	0.176	3.689***	0.000
The teaching methods at my school promote independent learning.	-0.002	0.040	-0.003	-0.053	0.958
I receive regular feedback that helps me improve my learning strategies.	0.024	0.047	0.024	0.501	0.616
My school provides adequate resources (e.g., books, online materials) for self-directed learning.	-0.023	0.034	-0.029	-0.676	0.499
I have access to technology that supports my independent learning (e.g., computers, internet).	0.095	0.039	0.113	2.446*	0.015
My parents support my efforts to learn independently.	0.082	0.044	0.092	1.849	0.065
My parents encourage me to set and achieve my own learning goals.	0.096	0.044	0.106	2.182*	0.030
The cultural attitudes in my community support independent learning.	-0.028	0.047	-0.031	-0.592	0.554
There is a strong emphasis on rote learning in my educational environment.	-0.032	0.030	-0.045	-1.072	0.284
I believe that my ability to learn autonomously positively affects my academic performance.	0.125	0.050	0.130	2.481*	0.014
I perform better in assignments and exams when I take charge of my own learning.	-0.048	0.051	-0.049	-0.932	0.352
My experiences with learner autonomy have increased my confidence in my abilities.	0.052	0.055	0.054	0.948	0.344

I feel more capable of solving problems independently as a result of learning autonomously.	0.095	0.041	0.113	2.333*	0.020
---	-------	-------	-------	--------	-------

5. Conclusion and Recommendation

5.1 Conclusion

Based on the findings described in Section 4, it is evident that several key factors significantly influence learner autonomy. These factors include the internal forces: self-regulation and monitoring, and motivation and resource seeking; and the external forces: teaching method and cultural attitude, parental support, grade level, and technological access. Understanding these elements can provide valuable insights into how to effectively foster and enhance learner autonomy.

- **Importance of Self-Regulation and Monitoring:** (1) *Ability to Monitor Progress:* This is identified as the most significant predictor for setting learning goals and reviewing learning plans. Effective self-monitoring helps learners stay on track and adjust their strategies, emphasizing its critical role in autonomous learning. (2) *Goal Setting and Planning:* The ability to set specific goals and plan for their achievement is also a strong predictor. This suggests that learners who actively engage in goal-setting and planning are better at managing their learning autonomously.
- **Intrinsic Motivation and Resource-Seeking:** (1) *Intrinsic Motivation:* Motivation to learn independently, even without direct supervision, significantly impacts various aspects of learner autonomy, including the ability to seek additional resources and the involvement in choosing study topics. (2) *Seeking Additional Resources:* Actively seeking resources beyond what is provided in the course enhances learners' autonomy, suggesting that resourcefulness is a key component of independent learning.
- **Teaching Methods and Cultural Attitudes:** (1) *Teaching Methods:* Methods that promote independent learning positively influence learners' ability to set goals and plan. This highlights the importance of educational practices that encourage self-directed learning. (2) *Cultural Attitudes:* Supportive cultural attitudes towards independent learning also play a role. The belief in autonomy's positive impact on academic performance and cultural support for independent learning enhance learner engagement and effectiveness.
- **Parental Influence and Grade Level:** (1) *Parental Support and Encouragement:* Parental support and encouragement are significant in influencing learners' autonomy, especially in setting and achieving learning goals. This underscores the role of external support systems in fostering autonomous learning. (2) *Grade Level Impact:* The negative relationship between grade level and motivation suggests that as students advance through their education, their intrinsic motivation to learn independently may decrease, possibly due to increasing pressures or changes in academic expectations.
- **Technological Access:** Having access to technology that supports independent learning positively affects learners' ability to review and adjust their learning plans, highlighting the role of technological tools in facilitating autonomous learning.

5.2 Recommendation

Based on the results of the factors influencing learner autonomy, here are tailored recommendations for educators, learners, parents, and policymakers:

For Educators

- **Promote Self-Regulation Skills:** (1) *Teach Goal-Setting and Planning:* Integrate goal-setting exercises and planning activities into the curriculum to help students develop these essential skills. (2) *Incorporate Self-Monitoring Practices:* Encourage students to regularly track and assess their progress. Provide tools and methods for effective self-monitoring, such as reflective journals or digital trackers.
- **Foster Intrinsic Motivation:** (1) *Encourage Resourcefulness:* Create assignments and projects that require students to seek out additional resources. This promotes independence and deeper learning. (2) *Design Independent Learning Opportunities:* Provide options for students to choose their topics or projects, enhancing their engagement and motivation.
- **Implement Effective Teaching Methods:** (1) *Adopt Independent Learning Strategies:* Use teaching methods that encourage autonomous learning, such as flipped classrooms, problem-based learning, or project-based learning. (2) *Provide Constructive Feedback:* Regular and meaningful feedback helps students refine their learning strategies and improve their autonomy.
- **Leverage Technology:** Utilize educational technologies that support independent learning, such as online resources, educational apps, or virtual collaboration tools.

For Learners

- **Develop Self-Regulation Techniques:** (1) *Set Personal Goals:* Regularly set and review personal learning goals to stay focused and motivated. (2) *Monitor Your Progress:* Keep track of your progress and adjust your learning strategies as needed.

- **Seek Additional Resources:** Actively seek out additional materials, such as books, articles, or online resources, to deepen your understanding and enhance your learning experience.
- **Engage in Independent Learning:** (1) *Choose Study Topics:* Where possible, select topics or projects that interest you to increase your engagement and motivation. (2) *Embrace Feedback:* Use feedback constructively to improve your learning strategies and achieve your goals.

For Parents and Caregiver

- **Support Autonomous Learning:** (1) *Encourage Goal-Setting:* Support your children in setting and achieving their learning goals. Provide guidance without micromanaging. (2) *Promote Resourcefulness:* Encourage your children to seek out additional resources and explore learning opportunities beyond the classroom.
- **Provide Emotional Support:** Create a positive learning environment at home by supporting your children's efforts and encouraging their independent learning endeavors.
- **Encourage Self-Monitoring:** Assist your children in tracking their progress and adjusting their learning strategies as necessary.

For Policy Makers

- **Support Educational Practices:** (1) *Promote Professional Development:* Provide training for educators on effective teaching methods that support learner autonomy, such as goal-setting, self-regulation, and independent learning strategies. (2) *Invest in Technology:* Ensure access to technology that supports autonomous learning for all students, particularly in under-resourced areas.
- **Encourage Parental Involvement:** Develop programs and resources to help parents support their children's autonomous learning and goal-setting.
- **Develop Supportive Policies:** (1) *Foster a Learning Culture:* Create policies that promote educational practices and cultural attitudes supportive of independent learning. (2) *Monitor and Evaluate:* Continuously assess the effectiveness of educational strategies and policies in promoting learner autonomy and make adjustments based on data and feedback.

By implementing these recommendations, educators, learners, parents, and policymakers can collaboratively enhance learner autonomy, leading to more effective and independent learning experiences.

Questionnaire on Learner Autonomy in Cambodian High Schools

Section 1: Demographic Information

Age

Gender

School Name

Location of School (Which province?)

School Type (Urban, Suburban, or Rural)

Grade Level (10th Grade, 11th Grade, or 12th Grade)

Learning Pathways: Science, Social Science, or Not Chosen Yet

Socioeconomic Status: (Low, Medium, or High)

From **Section 2** to **Section 4** below please choose the option which describe you or your opinion.

1 = Strongly Disagree

2 = Disagree

3 = Somewhat Disagree

4 = Slightly Disagree

5 = Neutral

6 = Slightly Agree

7 = Somewhat Agree

8 = Agree

9 = Strongly Agree

10 = Completely Agree

Section 2: Learner Autonomy

1. **Self-Regulation:**
 - o I can set my own learning goals.
 - o I can monitor my progress toward my learning goals.
2. **Self-Motivation:**
 - o I feel motivated to learn even without direct supervision.
 - o I actively seek additional resources to enhance my learning.
3. **Decision-Making:**
 - o I am involved in choosing the topics I study in my courses.
 - o I decide how to approach solving problems or assignments.
4. **Goal-Setting and Planning:**
 - o I set specific goals for my learning and plan how to achieve them.
 - o I regularly review and adjust my learning plans based on my progress.

Section 3: Influencing Factors

1. **Teaching Methods:**
 - o The teaching methods at my school promote independent learning.
 - o I receive regular feedback that helps me improve my learning strategies.
2. **School Resources:**
 - o My school provides adequate resources (e.g., books, online materials) for self-directed learning.
 - o I have access to technology that supports my independent learning (e.g., computers, internet).
3. **Parental Involvement:**
 - o My parents support my efforts to learn independently.
 - o My parents encourage me to set and achieve my own learning goals.
4. **Cultural Attitudes:**
 - o The cultural attitudes in my community support independent learning.
 - o There is a strong emphasis on rote learning in my educational environment.

Section 4: Outcomes

1. **Academic Performance:**
 - o I believe that my ability to learn autonomously positively affects my academic performance.
 - o I perform better in assignments and exams when I take charge of my own learning.
2. **Personal Development:**
 - o My experiences with learner autonomy have increased my confidence in my abilities.
 - o I feel more capable of solving problems independently as a result of learning autonomously.

References

- [1]MoEYS. (2019). Continuous Professional Development Framework for Teachers and School Directors. Phnom Penh: Ministry of Education, Youth and Sport.
- [2]MoEYS. (2023, May). National Policy Lifelong Learning. Retrieved August 30, 2024, from https://www.uil.unesco.org/sites/default/files/medias/fichiers/2023/05/cambodia_policy_on_III_04-10-18_eng_1.pdf

- [3]The Phnom Penh Post. (2021, January 05). MoEYS continues to plan for further success in education, youth and sport. Retrieved August 30, 2024, from <https://www.phnompenhpost.com>: <https://www.phnompenhpost.com/national/moeys-continues-plan-further-success-education-youth-and-sport>
- [4]Ngath, S., Eong, D., & Ly, S. (2024, August). Assessing the Impact of Technical, Psychological, Political, and Sociocultural Factors on Learner Autonomy among High School Students in Hun Sen Krong Tep Nimith Pailin High School, Cambodia. *International Journal of Research Publication and Reviews*, 5(8), 2621-2641. Retrieved from <https://ijrpr.com/uploads/V5ISSUE8/IJRPR32398.pdf>
- [5]Yurdakul, C. (2017). An Investigation of the Relationship between Autonomous Learning and Lifelong Learning. *International Journal of Educational Research Review*, 2(1), 15-20. doi:<https://doi.org/10.24331/ijere.309968>
- [6]O'Hara, D. (2017). The intrinsic motivation of Richard Ryan and Edward Deci. Retrieved from <https://www.apa.org>: <https://www.apa.org/members/content/intrinsic-motivation>
- [7]Sprouts. (2022, November 03). Self-Determination Theory: 3 Basic Needs That Drive Our Behavior. Retrieved from <https://www.youtube.com>: https://www.youtube.com/watch?v=_juPDoa3GBY
- [8]Busch, B. (2024, August 17). 5 ways Self-Determination Theory can help student motivation. Retrieved from <https://www.innerdrive.co.uk>: <https://www.innerdrive.co.uk/blog/self-determination-theory/>
- [9]McLeod, S. (2024, February 01). Constructivism Learning Theory & Philosophy of Education. Retrieved from <https://www.simplypsychology.org>: <https://www.simplypsychology.org/constructivism.html>
- [10]Piaget, J. (1964). Part I: Cognitive development in children: Piaget development and learning. *Journal Research in Science Teaching*, 2(3), 176-186. doi:10.1002/tea.3660020306
- [11]Sarbah, B. K. (2020). Constructivism Learning Approaches. *ResearchGate*, 3. doi:10.13140/RG.2.2.28138.34241
- [12]von Glasersfeld, E. (1995). A constructivist approach to teaching. In L. S. (Eds.), *Constructivism in education* (pp. 3-15). Hillsdale, NJ: Lawrence Erlbaum Associates.
- [13]Woolfolk, A. E. (1993). *educational psychology*. Boston: Allyn and Bacon.
- [14]McLeod, S. (2024, January 29). Carl Rogers Humanistic Theory and Contribution to Psychology. Retrieved from <https://www.simplypsychology.org>: <https://www.simplypsychology.org/carl-rogers.html>
- [15]McClain, R. (2024, May 27). Carl Roger Person Centered Theory. Retrieved from <https://medium.com>: <https://medium.com/@justincampbell555/carl-roger-person-centered-theory-cee0c37909d6>
- [16]Dannen, R. (2021, September 20). Self-Actualization. Retrieved from <https://ywaspokane.org>: <https://ywaspokane.org/survivetothrive-self/>
- [17]McEwen, L., & Tilbury, D. (2009). *Transformational Learning*. Pedagogic Research & Scholarship Institute, 3.
- [18]Mezirow, J. (1997). *Transformative Learning: Theory to Practice*. In *New Directions for Adult and Continuing Education* (p. 5). Jossey-Bass Publishers.
- [19]Tsimane, T. A., & Downing, C. (2020, January 10). Transformative learning in nursing education: A concept analysis. *Int J Nurs Sci*, 91-98. doi:10.1016/j.ijnss.2019.12.006
- [20]WGU. (2020, June 08). *Experiential Learning Theory*. Retrieved August 19, 2024, from <https://www.wgu.edu>: <https://www.wgu.edu/blog/experiential-learning-theory2006.html>
- [21]Naesgaard, E. (2011). *Engaging in Dance Culture Engaging in Dance Culture Interior Design of a Collaborative Dance Centre*. Winnipeg: Department of Interior Design University of Manitoba.
- [22]Inchainge. (2024, June 04). *Learning cycle*. Retrieved August 19, 2024, from <https://inchainge.com>: <https://inchainge.com/knowledge/experiential-learning/learning-cycle/>
- [23]Boggu, A. T., & Sundarsingh, J. (2019). An Experiential Learning Approach to Fostering Learner Autonomy among Omani Students. *Journal of Language Teaching and Research*, 10, 205. doi:<http://dx.doi.org/10.17507/jltr.1001.23>
- [24]The University of Texas at Austin. (2019, October 25). *Experiential Learning: Autonomy*. Retrieved August 19, 2024, from <https://ctl.utexas.edu>: <https://ctl.utexas.edu/events/experiential-learning-autonomy>
- [25]Pappas, C. (2013, May 09). *The Adult Learning Theory - Andragogy - of Malcolm Knowles*. Retrieved August 19, 2024, from <https://elearningindustry.com>: <https://elearningindustry.com/the-adult-learning-theory-andragogy-of-malcolm-knowles>
- [26]Pappas, C. (2014, January 20). *7 Top Facts About The Adult Learning Theory (2018 Update)*. Retrieved August 19, 2024, from <https://elearningindustry.com>: <https://elearningindustry.com/the-adult-learning-theory-andragogy-of-malcolm-knowles>

-
- [27] Jones, P. (2023, May 23). The 6 Principles of Andragogy: Empowering Adult Learners. Retrieved August 19, 2024, from <https://www.linkedin.com/pulse/6-principles-andragogy-empowering-adult-learners-philip-jones>
- [28] Merriam, S. B. (2001). Andragogy and Self-Directed Learning: Pillars of Adult Learning Theory. In *New Directions for Adult and Continuing Education* (p. 10). Spring: Jossey-Bass, A Publishing Unit of John Wiley & Sons, Inc.
- [29] Brooks, R. (2023, February 20). What is critical pedagogy? . Retrieved August 20, 2024, from <https://online.wrexham.ac.uk/https://online.wrexham.ac.uk/what-is-critical-pedagogy/>
- [30] Kincheloe, J., & Steinburg, S. (1997). *Changing Multiculturalism*. Bristol: Open University Press.
- [31] Giroux, H. A. (2007). Utopian thinking in dangerous times: Critical pedagogy and the project of educated hope. In *Utopian Pedagogy* (pp. 25-42).
- [32] Veetil, R., & Mathew, B. P. (2022). Self-Nurturing and Learner Autonomy through Critical Thinking. *ResearchGate*, 6(1), 2181-2190.
- [33] Structural Learning. (2023, March 06). Sociocultural Theory: What is Lev Vygotsky's sociocultural theory, and what is its significance for child development in school? Retrieved August 20, 2024, from <https://www.structural-learning.com/https://www.structural-learning.com/post/sociocultural-theory>
- [34] Moreno, R. (2010). *Educational Psychology*. New Mexico: John Wiley & Sons, Inc.
- [35] Chowdhury, T. A. (2021). Fostering Learner Autonomy through. *Shanlax International Journal of Education*, 10(1), 89-95. doi:<https://doi.org/10.34293/>