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# 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

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**A B S T R A C T**

This study examines learner autonomy among high school students at Hun Sen Krong Tep Nimith Pailin High School in Cambodia, employing a cross-sectional quantitative approach with a sample of 170 students. The research evaluates how technical, psychological, political, and sociocultural factors influence learner autonomy, focusing on aspects such as self-regulation, self-motivation, decision-making, and access to educational resources. Findings indicate that while students exhibit strong self-motivation and goal-setting abilities, there are notable variations in their perceptions of teaching methods, resource availability, and parental support. These differences highlight the complex interplay between individual and external factors affecting learner autonomy. The study underscores the importance of addressing these factors to enhance educational practices and support systems, aiming to promote greater learner independence and improve both academic performance and personal development. This comprehensive analysis provides valuable insights into how educational environments can be adapted to better support autonomous learning.

Keywords: Autonomous Learning, Self-Regulation, Self-Motivation, Sociocultural Perspective, Psychological Perspective, Personal Development,

## 1. Introduction

Autonomous learning refers to the ability and willingness to engage in self-directed learning (Sok, 2021)[1]. In this framework, learners independently determine the necessary steps to achieve their goals, including when and how to complete each step (Ochoa, 2023)[2]. Supporting this, a study by Sun Somara found a strong positive correlation (0.74) between learner autonomy and academic performance, with a p-value of less than 0.01 (Sun, 2023)[3]. Recognizing its importance, learner autonomy has become a key focus in Cambodia's Ministry of Education reform initiatives, emphasizing its role in promoting lifelong learning (Keuk, C.N. & Lim, C., 2019)[4].

The Cambodian Ministry of Education, Youth, and Sports (MoEYS) promotes lifelong learning and learner autonomy through several key initiatives and reforms. In their strategic plan for 2019-2023, the Ministry focused on ten areas for reform under the Education, Youth, and Sport Strategy Reforms. These areas include: (1) Consistency with National Education Policy Reform, Teacher Training, and School Reform; (2) Priority of Education Policy Reforms in the Five-Pillar Framework; (3) Education Management Reform Strategies; (4) Teacher Training Reform at Teacher Education Institutions; (5) School Reform; (6) Youth Development Reform; (7) Physical Education and Sport Development Reform; (8) Promotion of Digital Education; (9) Gender Mainstreaming; and (10) Decentralization and De-concentration Reform (Ministry of Education, Youth and Sport, 2019)[5]. This key initiative seeks to establish a new model of public schools in Cambodia to enhance the quality of general education (Heng, K., & Sol, K., 2023)[6].

Despite various reform efforts, many Cambodian classrooms still predominantly employ a traditional teacher-centered approach, which can impede the development of learner autonomy. Teachers feel unable to implement child-centered pedagogy due to several constraints, including overcrowded classrooms, diverse student abilities, limited teaching resources, and an overloaded curriculum (Song, 2015)[7]. This classroom organization fosters a rigid, teacher-centered environment that emphasizes a standardized curriculum and memory-based tests, often disregarding individual learning differences, including those of students with learning disabilities. Additionally, teacher-centered classrooms tend to neglect the development of soft skills such as critical thinking, reflective thinking, problem-solving, and collaboration. This is because they restrict students' movement, limit opportunities for group discussions, reduce peer interactions, and hinder conflict resolution skills (Future Forum, 2023)[8].

### *1.1 Research Gaps*

Despite the substantial body of literature on educational reforms in Cambodia, research specifically focusing on learner autonomy remains limited. While there is considerable attention to various aspects of education, key gaps persist in understanding how Cambodian students exercise learner

autonomy. There is a need to explore the current extent of learner autonomy among high school students, identify the factors influencing its development in Cambodian schools, and investigate effective strategies for promoting it within the unique educational context of Cambodia.

Furthermore, the impact of learner autonomy on students' academic outcomes and personal development is not well-documented. Addressing these gaps could provide valuable insights into how learner autonomy affects educational experiences and achievements. By focusing on these areas, researchers and educators can better understand and support the development of learner autonomy, ultimately enhancing educational practices and outcomes in Cambodia.

### *1.2 Research Questions*

This study delves into various facets of learner autonomy, exploring its dimensions, influencing factors, and outcomes. In order to address these key areas, the research is organized around six specific research questions concerning high school learners in Hun Sen Krong Tep Nimith Pailin High School:

- How do technical, psychological, political, and sociocultural perspectives of learner autonomy manifest among students at Hun Sen Krong Tep Nimith Pailin High School?
- What is the relationship between students' self-regulation skills and their perceptions of teaching methods, school resources, and parental support in promoting learner autonomy?
- How does self-motivation for independent learning correlate with the availability of resources, access to technology, and cultural attitudes among students?
- What are the effects of students' learner autonomy on their academic performance and personal development, specifically in terms of confidence and problem-solving skills?
- How do the factors influencing learner autonomy, such as feedback, teaching methods, and cultural attitudes, affect students' goal-setting and planning behaviors?
- What role does parental involvement play in shaping students' self-regulation and motivation for autonomous learning, and how does this influence their overall academic outcomes?

### *1.3 Research Objectives*

This study aims to analyze perspectives on learner autonomy by investigating how technical, psychological, political, and sociocultural viewpoints manifest in students' experiences and behaviors at Hun Sen Krong Tep Nimith Pailin High School. By exploring these diverse perspectives, the research seeks to understand the various ways in which learner autonomy is perceived and exhibited among students.

Additionally, the research will examine the relationship between students' self-regulation skills and their perceptions of teaching methods, school resources, and parental support. This objective focuses on exploring how these influencing factors contribute to fostering learner autonomy and how they are interrelated with students' ability to self-regulate their learning.

The study will also assess the correlation between students' self-motivation for independent learning and external factors such as resource availability, access to technology, and cultural attitudes. Understanding these correlations will provide insights into how external factors impact students' intrinsic motivation and their approach to autonomous learning.

Finally, the research will evaluate the impact of learner autonomy on academic and personal outcomes, including confidence and problem-solving skills. It will also investigate how parental involvement influences students' self-regulation and motivation for autonomous learning and its subsequent effect on academic performance. These objectives collectively aim to provide a comprehensive view of how learner autonomy is cultivated and its effects on students' educational experiences and achievements.

## 2. Literature Review

### *2.1 What is Learner Autonomy?*

Autonomy, as defined by Rotter, is the sense of having an internal locus of control to influence one's environment (Rotter, 1966)[9]. In the context of learning, however, autonomy goes beyond this definition, extending to an individual's ability to take charge of their own learning (Holec, 1981)[10]. It involves "a capacity for a certain range of highly conscious behavior that embraces both the process and the content of learning," positioning autonomy as an inherent characteristic of the learner. Moreover, it underscores the significance of interdependence, where learners collaborate, share resources, and negotiate learning goals. This perspective emphasizes that effective autonomy requires a balance between self-direction and interaction with peers and instructors (Little, 1999)[11]. Blidi further adds that learner autonomy includes learner involvement, self-learning, and self-enhanced learning (Blidi, 2017)[12].

Given more opportunities to take responsibility for their own learning, students are more interested in pursuing their assignment and more self-regulating than those controlled by their teachers (Grolnick, W. S., et al., 2002)[13]. And when students feel a sense of autonomy, it is likely that they will engage more in academic activities (Hardre, P. L., & Reeve, J., 2003)[14].

### *2.2 Theoretical Framework*

**Self-Determination Theory:** SDT is a psychological framework for understanding human motivation, developed by Edward Deci and Richard Ryan. It emphasizes the importance of humans' evolved inner resources for personality development and behavioral self-regulation (Deci, E.L., & Ryan, R.M., 1985)[15]. According to SDT, cited by Mika and his team, humans have three fundamental psychological needs: autonomy (engaging in actions with a true sense of choice), competence (the feeling of mastery and effectiveness), and relatedness (the desire to form meaningful connections with others) (Mika Manninen et al., 2022)[16].

**Andragogy:** Popularized by Malcolm Knowles, andragogy is the theory of adult learning that emphasizes the need for learners to be self-directed. According to this theory, adults are more motivated when they are given control over their learning and can relate their learning to their own experiences (Knowles, 1980)[17]. The key principles of andragogy emphasize the unique characteristics of adult learners: (Self-concept, Learning from experience, Readiness to learn, Immediate applications, Internal motivated, Need to know). As individuals mature, they become more self-directed and take greater responsibility for their own learning, preferring to be actively involved in the planning and evaluation of their instruction. Adults bring a rich reservoir of life experiences to the learning process, which serves as a crucial resource for discussions, learning activities, and problem-solving. They are typically more ready to learn when they recognize the relevance of new knowledge or skills to their personal and professional lives, often seeking learning opportunities that address immediate needs or goals. Unlike younger learners, adults are more problem-centered, favoring practical and applicable learning over abstract or theoretical content. Although external motivators like job advancement or certification can influence adult learners, their primary motivation often stems from internal factors, such as the desire for self-improvement, personal growth, or achieving specific goals. Furthermore, adult learners need to understand the significance of what they are learning, as they seek to know the "why" before fully engaging in the learning process (Bouchrika, 2024)[18].

**Metacognition:** Proposed by John Flavell, in any cognitive interaction with either human or non-human environments, various information processing activities can occur. Metacognition involves, among other aspects, the active oversight and regulation of these processes concerning the cognitive objects or data involved, typically aiming to achieve a specific goal or objective (Flavell, 1976)[19]. That is, metacognition means thinking about one's own thinking. When one is solving a problem or learning something new, metacognition involves checking in with themselves to see how they are doing and making adjustments to improve their understanding or performance. John Flavell's work on metacognition primarily focused on cognitive development and the mechanisms of metacognition. However, he also underscored the importance of cultural influences, recognizing that cultural factors can shape how people understand and approach learning. In simpler terms, Flavell highlighted that individuals' beliefs about learning and their strategies for learning are often influenced by their cultural background (Flavell, 1987)[20].

### *2.3 Categories of Learner Autonomy*

Various terms are often used interchangeably to refer to learner autonomy, such as "learner independence," "self-direction," "autonomous learning," and "independent learning" (Ponton, M.K., & Rhea, N.E., 2006) [21]. To simplify these terms, Ivanovska categorizes learner autonomy into three perspectives: technical, psychological, and political (Ivanovska, 2015)[22]. Oxford later introduced a fourth perspective—sociocultural—to the existing classifications (Oxford, 2003)[23]. The conceptualization of learner autonomy into these four categories stems from the understanding that "autonomous learning results from the interplay among the environment, the person, and behaviors, and is the mechanism through which self-motivated personal development is realized". Therefore, when considering learner autonomy, it is essential to take these four perspectives into account.

***Learner autonomy from technical perspective***

According to the technical perspective, learner autonomy is shaped by the learning environment (Dang, 2012)[24], including the methods and processes adopted both inside (Anderson, 2015)[25] and outside the classroom. This environment enables learners to develop strategies and skills for effective or independent learning (Ertürk, 2016)[26].

In 2016, a study by Lengkanawati on learner autonomy in Indonesian EFL settings found that the majority of instructors (60%) agreed that learner autonomy could be developed through independent study in the library, learning outside the classroom, independent work in self-access centers, and out-of-class tasks involving the use of the internet. However, they did not agree that learner autonomy equates to learning without a teacher (Lengkanawati, 2017)[27]. Similarly, a study conducted in Turkey a year earlier found that most instructors believed learner autonomy, from a technical perspective, could be fostered outside the classroom through self-study in the library, independent work in a self-access center, and out-of-class activities (Doğan, 2015)[28].

***Learner autonomy from psychological perspective***

While the technical perspective focuses on the learning environment and classroom attributes, the psychological perspective centers on the characteristics of the learners themselves (Ningsih, S., & Yusuf, F.N., 2021)[29]. Specifically, this perspective emphasizes learners' personal attributes and their emotional capacity to take control of their own learning (O'Leary, 2014)[30].

Addressing learners' psychological needs can motivate them to develop autonomous learning behaviors, as guided teaching (Iimuro, A., & Berger, M., 2010)[31] reduces their internal obstacles to autonomous learning (Wall, 2003)[32]. A recent study in Indonesia on EFL teachers' beliefs about learner autonomy in non-formal education found that the majority of teachers regard the psychological perspective—emphasizing the emotional and mental aspects of learners—as the most important (Ma'wa, J., & Madya, S., 2021)[33]. In contrast, a study conducted a year earlier in East Java on teachers' perceptions of learner autonomy in secondary schools revealed that, among the four dimensions, the psychological dimension was considered the second most important for promoting autonomous learning (Budiyani, 2020)[34].

***Learner autonomy from political perspective***

Sometimes, the term is expanded to include the political-critical perspective (Benson, 2006)[35]. From this viewpoint, learners are empowered to take control over both the content and process of their learning (Ivanovska, 2015)[22]. This perspective contrasts with the technical perspective, where the content and methods of learning are determined by the teachers. According to Trim, the process of learning should be more democratic (Trim, 1978)[36], allowing students to steer and control their own progress (Little, 2007)[37]. Therefore, educational practices, including those of teachers, should be more flexible to accommodate learners' choices regarding the content and process of their learning.

In Saudi Arabia, a 2017 study investigated teachers' perspectives on learner autonomy. The findings indicate that Saudi teachers pay little attention to the political perspective of learner autonomy, as most control what and how they teach their students (Alrabai, 2017)[38]. In contrast, a 2018 study conducted in Kurdistan-Iraq found that due to the cultural and educational legacy inherited from the Iraqi formal education system, students have minimal opportunities for learner autonomy. The system remains traditional, centralized, and authoritarian (Hamad, 2018)[39]. A study in Vietnam, conducted in 2009 by Nguyen, revealed that both learners and teachers are interested in the concept of learner autonomy, particularly from the political-critical perspective. However, due to bureaucratic constraints within the Vietnamese educational system, both teachers and learners feel unable to implement changes in the classroom, as they perceive themselves as not permitted to do so (Nguyen, 2009)[40].

***Learner autonomy from sociocultural perspective***

Similar to the political perspective, which is sometimes expanded to the political-critical perspective, the sociocultural perspective is often referred to as the social perspective (Smith, R., & Ushioda, E., 2009)[41]. This perspective views autonomy as a socially-shaped variable, assuming that learners, as human beings, need to negotiate and interact with their environment. Through this process of negotiation and interaction, autonomous learning develops (Sinclair, 2009)[42].

In contrast to the traditional teaching approach, where learners were expected to passively listen to lecturers, EFL learners in Vietnam now have more opportunities to interact with their peers. This shift is attributed to both the teaching methods and the cultural context, as Vietnamese people are known for their hardworking nature (Dang, 2010)[43]. In Saudi Arabia, teachers perceive that social interaction and cooperation in the classroom play a crucial role in promoting learner autonomy, in contrast to individual work (Alrabai, 2017)[35]. Different cultures may place varying emphases on learner autonomy (Althaqafi, 2017)[44], but it is clear that learner autonomy is both socially mediated and socially constructed (Murray, 2014)[45].

## 3. Methodology

### *3.1 Research Design*

This research employed a cross-sectional quantitative study design , which involves collecting data at a single point in time, to comprehensively analyze learner autonomy among students at Hun Sen Krong Tep Nimith Pailin High School. The study aimed to investigate the relationship between learner autonomy and its influencing factors, including self-regulation, self-motivation, decision-making, and the availability of resources and support systems.

The sample population consisted of 170 students from Hun Sen Krong Tep Nimith Pailin High School, selected using a convenient sampling and snowball technique across different grade levels (10th, 11th, and 12th grades). The demographic data collected included age, gender, grade level, learning pathways (science or social science), and socioeconomic status.

Data were collected using a structured questionnaire via Google Form, which was designed to capture both demographic information and various dimensions of learner autonomy. The questionnaire included scales for measuring self-regulation, self-motivation, decision-making, and the influencing factors such as teaching methods, school resources, parental involvement, and cultural attitudes. Responses were recorded on a Likert scale ranging from 1 (strongly disagree) to 10 (strongly agree) to quantify the levels of agreement with each statement.

The study focused on both independent and dependent variables. The independent variables included teaching methods, school resources, parental involvement, and cultural attitudes, while the dependent variables were the components of learner autonomy: self-regulation, self-motivation, decision-making, and goal setting. The demographic variables were also included in the analysis to control for potential confounding factors.

***Data Analysis***

Data analysis in this study revealed the dataset comprised 170 students, with all cases being valid and utilized in the analysis. No cases were excluded, indicating that each student's data was complete and met the study's criteria. The reliability statistics demonstrated a Cronbach's Alpha of 0.919 for the

29 items on the questionnaire. This high Cronbach's Alpha indicated a strong level of internal consistency, suggesting that the items were highly reliable in measuring the construct of learner autonomy. Thus, the scale used in the study effectively provided consistent and dependable results.

Moreover, descriptive statistics were used to summarize the demographic information of the sample, including means, standard deviations, and coefficients of variation for continuous variables such as age and Likert scale responses. The analysis highlighted the variability within the sample, particularly focusing on gender distribution, grade levels, learning pathways, and socioeconomic status.

To explore the relationships between learner autonomy and its influencing factors, Pearson correlation coefficients were calculated. These correlations were used to determine the strength and direction of the relationships between variables such as goal-setting, progress monitoring, motivation, decision-making, and the influencing factors.

### *3.2 Ethical and Limitation*

Ethical considerations for the study were carefully addressed. Although formal ethical approval from the school administration was not obtained, participation in the study was voluntary, and informed consent was secured from all participants. Confidentiality and anonymity of the respondents were maintained throughout the research process. Data were collected and stored securely, with access restricted to the research team to ensure privacy and data protection.

While this study provides valuable insights into learner autonomy, it is limited by its cross-sectional design, which restricts the ability to infer causality. Additionally, the study was conducted in a single school, which may limit the generalizability of the findings to other contexts. Further research involving longitudinal studies and a more diverse sample population is recommended to validate and expand upon these findings.

## 4. Results of the Study

### *4.1 Comprehensive Analysis of Learner Autonomy*

***Demographic Information***

The descriptive statistics for the dataset, based on 170 students from Hun Sen Krong Tep Nimith Pailin High School, regarding demographic information, shows that the average age of participants is 16.22 years, with a standard deviation of 1.149 and a coefficient of variation of 7%, indicating low variability in age among the students. Gender has a mean of 1.37 (where 1 represents female and 2 represents male), with a standard deviation of 0.484 and a coefficient of variation of 35%, suggesting a moderate diversity in gender distribution among the participants.

Certain variables, such as school name, province, school type, and school location, have no variation, as indicated by their mean and standard deviation values of 1.00 and 0.000, respectively, resulting in a 0% coefficient of variation. This results from the situation that all participants are from the same school, province, and type, and are located in the same area. The grade level has a mean of 10.29, a standard deviation of 0.620, and a 6% coefficient of variation, reflecting minimal variation in grade levels; there are only three grade levels in the study the $10^{th}$ grade, $11^{th}$ and $12^{th}$.

The learning pathways variable has a mean of 1.68 (where 1 represents the science pathway and 2 represents the social science pathway), with a standard deviation of 0.725 and a coefficient of variation of 43%, indicating substantial variability in the learning pathways chosen by the students. Socioeconomic status has a mean of 1.94 (where 1 represents low, 2 represents medium, and 3 represents high), with a standard deviation of 0.507 and a coefficient of variation of 26%, indicating moderate variability in the socioeconomic status of the participants.

***Learner Autonomy***

***Self-Regulation:*** The students' self-regulation in autonomous learning behaviors shows a certain level of consistency. The ability to set their own learning goals has a mean of 7.23, with a standard deviation of 1.781 and a coefficient of variation of 25%. This indicates some variability in their goal-setting abilities. In comparison, the ability to monitor their progress toward learning goals has a nearly identical mean of 7.22, with a slightly lower standard deviation of 1.670 and a coefficient of variation of 23%, suggesting a somewhat more consistent ability in monitoring progress.

***Self-Motivation:*** The students' self-motivation toward autonomous learning behaviors reflects a strong inclination. The motivation to learn even without direct supervision has a high mean of 8.11, with a standard deviation of 1.569 and a coefficient of variation of 19%, indicating consistent motivation among students. Additionally, the active seeking of additional resources to enhance learning has a mean of 7.34, with a standard deviation of 1.675 and a coefficient of variation of 23%, suggesting a slightly higher variability in the pursuit of learning resources.

***Decision-Making:*** In regard to their decision-making learning process, the students' involvement varies. When it comes to choosing the topics they study in their courses, the mean is 6.59, with a standard deviation of 1.870 and a coefficient of variation of 28%, indicating a relatively high variability in this aspect of self-directed learning. On the other hand, deciding how to approach solving problems or assignments shows a higher mean of 7.11, with a standard deviation of 1.704 and a coefficient of variation of 24%, reflecting a slightly more consistent approach in this area.

***Goal Setting and Planning:*** The students demonstrate a proactive approach to managing their learning. Setting specific goals and planning how to achieve them has a mean of 7.65, with a standard deviation of 1.673 and a coefficient of variation of 22%, indicating relatively consistent goal-setting

behaviors. Additionally, regularly reviewing and adjusting learning plans based on progress shows a mean of 7.35, with a standard deviation of 1.724 and a coefficient of variation of 23%, suggesting slightly more variability in how participants adapt their learning strategies over time.

***Influencing Factors***

***Teaching Methods:*** The data reveals varying perceptions of how the school environment supports independent learning. The effectiveness of teaching methods in promoting independent learning has a mean of 6.59, with a standard deviation of 2.097 and a coefficient of variation of 32%, indicating considerable variability in participants' experiences. On the other hand, receiving regular feedback that helps improve learning strategies has a mean of 7.11, with a standard deviation of 1.666 and a coefficient of variation of 23%, reflecting more consistent experiences in receiving helpful feedback.

***School Resource:*** The availability of resources for self-directed learning at the school shows some variability in student perceptions. The adequacy of resources such as books and online materials has a mean of 7.44, with a standard deviation of 2.101 and a coefficient of variation of 28%, indicating a moderate level of consistency in how students perceive the availability of these resources. In contrast, access to technology that supports independent learning, such as computers and the internet, has a lower mean of 6.84, with a standard deviation of 2.097 and a higher coefficient of variation of 31%, reflecting greater variability in the students' access to technological resources.

***Parental Involvement:*** Parental support significantly influences students' independent learning efforts. The perception that parents support their efforts to learn independently has a mean of 7.69, with a standard deviation of 1.891 and a coefficient of variation of 25%, indicating a relatively consistent level of support among the participants. Furthermore, the encouragement from parents to set and achieve their own learning goals is reflected in a higher mean of 7.94, with a standard deviation of 1.924 and a slightly lower coefficient of variation of 24%, suggesting even more consistent encouragement for goal-setting and achievement.

***Cultural Attitudes:*** The cultural attitudes and educational environment of the participants show differing levels of support for independent learning. The statement that cultural attitudes in the community support independent learning has a mean of 6.66, with a standard deviation of 1.897 and a coefficient of variation of 28%, indicating moderate consistency in this support. On the other hand, the statement highlighting a strong emphasis on rote learning within the educational environment has a lower mean of 6.43, with a higher standard deviation of 2.24 and a coefficient of variation of 35%. This suggests that rote learning is more variably emphasized among students, reflecting less consistency in this aspect of their educational experience.

***Outcomes***

***Academic Performance:*** The students' perceptions regarding their autonomous learning abilities and its influence on academic performance reveal distinct trends. For the statement "I believe that my ability to learn autonomously positively affects my academic performance," the mean score is 7.26, with a standard deviation of 1.776 and a coefficient of variation of 24%. This reflects a relatively high and consistent belief in the positive impact of independent learning on academic outcomes. In contrast, the statement "I perform better in assignments and exams when I take charge of my own learning" has a higher mean score of 7.76, a standard deviation of 1.805, and a coefficient of variation of 23%. This indicates a stronger and slightly more uniform perception of the benefits of self-directed learning specifically in assignments and exams.

***Personal Development:*** The students' perceptions regarding the impact of learner autonomy on their confidence and problem-solving skills reveal notable differences. For the statement "My experiences with learner autonomy have increased my confidence in my abilities," the mean score is 7.55, with a standard deviation of 1.758 and a coefficient of variation of 23%. This reflects a relatively strong and consistent belief that learner autonomy boosts confidence. Conversely, the statement "I feel more capable of solving problems independently as a result of learning autonomously" has a lower mean score of 6.52, a standard deviation of 1.928, and a coefficient of variation of 30%. This indicates a more variable and somewhat less consistent view of how autonomous learning influences problem-solving capabilities.

**Table 1: Comprehensive Analysis of Learner Autonomy**

| | N | Mean | | Std. Deviation Statistic | Variance Statistic | Coefficient of Variation |
|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | | | |
| Age (V1) | 170 | 16.22 | 0.088 | 1.149 | 1.319 | 7% |
| Gender (V2) | 170 | 1.37 | 0.037 | 0.484 | 0.235 | 35% |
| School Name (V3) | 170 | 1 | 0 | 0 | 0 | 0% |
| Province (V4) | 170 | 1 | 0 | 0 | 0 | 0% |
| School Type (V5) | 170 | 1 | 0 | 0 | 0 | 0% |
| School Location (V6) | 170 | 1 | 0 | 0 | 0 | 0% |

| | | | | | | |
|---|---|---|---|---|---|---|
| Grade Level (V7) | 170 | 10.29 | 0.048 | 0.62 | 0.384 | 6% |
| Learning Pathways (V8) | 170 | 1.68 | 0.056 | 0.725 | 0.526 | 43% |
| Socioeconomic Status (V9) | 170 | 1.94 | 0.039 | 0.507 | 0.257 | 26% |
| I can set my own learning goals. (V10) | 170 | 7.23 | 0.137 | 1.781 | 3.172 | 25% |
| I can monitor my progress toward my learning goals. (V11) | 170 | 7.22 | 0.128 | 1.67 | 2.79 | 23% |
| I feel motivated to learn even without direct supervision. (V12) | 170 | 8.11 | 0.12 | 1.569 | 2.462 | 19% |
| I actively seek additional resources to enhance my learning. (V13) | 170 | 7.34 | 0.128 | 1.675 | 2.806 | 23% |
| I am involved in choosing the topics I study in my courses. (V14) | 170 | 6.59 | 0.143 | 1.87 | 3.498 | 28% |
| I decide how to approach solving problems or assignments. (V15) | 170 | 7.11 | 0.131 | 1.704 | 2.905 | 24% |
| I set specific goals for my learning and plan how to achieve them. (V16) | 170 | 7.65 | 0.128 | 1.673 | 2.798 | 22% |
| I regularly review and adjust my learning plans based on my progress. (V17) | 170 | 7.35 | 0.132 | 1.724 | 2.974 | 23% |
| The teaching methods at my school promote independent learning. (V18) | 170 | 6.59 | 0.161 | 2.097 | 4.396 | 32% |
| I receive regular feedback that helps me improve my learning strategies. (V19) | 170 | 7.11 | 0.128 | 1.666 | 2.774 | 23% |
| My school provides adequate resources (e.g., books, online materials) for self-directed learning. (V20) | 170 | 7.44 | 0.161 | 2.101 | 4.413 | 28% |
| I have access to technology that supports my independent learning (e.g., computers, internet). (V21) | 170 | 6.84 | 0.161 | 2.097 | 4.399 | 31% |
| My parents support my efforts to learn independently. (V22) | 170 | 7.69 | 0.145 | 1.891 | 3.577 | 25% |
| My parents encourage me to set and achieve my own learning goals. (V23) | 170 | 7.94 | 0.148 | 1.924 | 3.701 | 24% |
| The cultural attitudes in my community support independent learning. (V24) | 170 | 6.66 | 0.145 | 1.897 | 3.597 | 28% |
| There is a strong emphasis on rote learning in my educational environment. (V25) | 170 | 6.43 | 0.172 | 2.24 | 5.016 | 35% |
| I believe that my ability to learn autonomously positively affects my academic performance. (V26) | 170 | 7.26 | 0.136 | 1.776 | 3.154 | 24% |
| I perform better in assignments and exams when I take charge of my own learning. (V27) | 170 | 7.76 | 0.138 | 1.805 | 3.258 | 23% |
| My experiences with learner autonomy have increased my confidence in my abilities. (V28) | 170 | 7.55 | 0.135 | 1.758 | 3.089 | 23% |
| I feel more capable of solving problems independently as a result of learning autonomously. (V29) | 170 | 6.52 | 0.148 | 1.928 | 3.719 | 30% |
| Valid N (listwise) | 170 | | | | | |

### *4.2 The Relationship between Learner Autonomy with Its Influencing Factors*

***Relationship with Self-Regulation:***

The link between learner autonomy (self-regulation) and its influencing factors reveals several key correlations. Learner autonomy, defined as the ability to set and monitor personal learning goals, is significantly affected by various educational elements.

Firstly, the capacity to set personal learning goals is positively correlated with the ability to track progress towards these goals, evidenced by a strong Pearson correlation coefficient of 0.492 ($p < 0.001$). This indicates that students skilled in goal-setting are also proficient in monitoring their progress. Additionally, there is a notable correlation between goal-setting and perceptions of teaching methods that encourage independent learning (0.529, $p < 0.001$), suggesting that students who set their own goals view their educational environment as supportive of self-directed learning.

Feedback is another crucial factor. Regular feedback that improves learning strategies correlates significantly with both goal-setting (0.452, $p < 0.001$) and progress monitoring (0.467, $p < 0.001$), emphasizing its role in enhancing self-regulation. Access to resources and technology for self-directed learning, such as books and online materials, also supports learner autonomy. The correlation between resource availability and goal-setting is 0.329 ($p < 0.001$), and technology access correlates at 0.384 ($p < 0.001$) with goal-setting.

Parental support plays a significant role as well. Students with supportive parents who encourage independent learning exhibit higher autonomy, with correlations of 0.459 ($p < 0.001$) for goal-setting and 0.337 ($p < 0.001$) for goal achievement. This underscores the importance of familial support in fostering self-regulation.

Cultural attitudes also impact learner autonomy. Positive cultural attitudes that support independent learning correlate strongly with goal-setting (0.461, $p < 0.001$) and feedback reception (0.600, $p < 0.001$). Conversely, an emphasis on rote learning negatively affects self-regulation, with a correlation of 0.336 ($p < 0.001$) indicating that rote learning environments may hinder goal-setting.

**Table 2: Self-Regulation and Influencing Factors**

| | | I can set my own learning goals. | I can monitor my progress toward my learning goals. | The teaching methods at my school promote independent learning. | I receive regular feedback that helps me improve my learning strategies. | My school provides adequate resources (e.g., books, online materials) for self-directed learning. | I have access to technology that supports my independent learning (e.g., computers, internet). | My parents support my efforts to learn independently. | My parents encourage me to set and achieve my own learning goals. | The cultural attitudes in my community support independent learning. | There is a strong emphasis on rote learning in my educational environment. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I can set my own learning goals. | Pearson Correlation | 1 | .492** | .529** | .452** | .329** | .384** | .459** | .337** | .461** | .336** |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I can monitor my progress toward my learning goals. | Pearson Correlation | .492** | 1 | .352** | .467** | .316** | .294** | .461** | .350** | .433** | .245** |
| | Sig. (2-tailed) | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| The teaching methods at my school promote independent learning. | Pearson Correlation | .529** | .352** | 1 | .469** | .400** | .481** | .554** | .286** | .721** | .429** |
| | Sig. (2-tailed) | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I receive regular feedback that helps me improve my learning strategies. | Pearson Correlation | .452** | .467** | .469** | 1 | .478** | .364** | .387** | .371** | .600** | .247** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| My school provides adequate resources (e.g., books, online materials) for self-directed learning. | Pearson Correlation | .329** | .316** | .400** | .478** | 1 | .529** | .432** | .342** | .448** | .357** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I have access to technology that supports my independent learning (e.g., computers, internet). | Pearson Correlation | .384** | .294** | .481** | .364** | .529** | 1 | .436** | .426** | .539** | .316** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 |
| My parents support my efforts to learn independently. | Pearson Correlation | .459** | .461** | .554** | .387** | .432** | .436** | 1 | .514** | .655** | .417** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| My parents encourage me to set and achieve my own learning goals. | Pearson Correlation | .337** | .350** | .286** | .371** | .342** | .426** | .514** | 1 | .454** | .281** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 |
| The cultural attitudes in | Pearson | .461** | .433** | .721** | .600** | .448** | .539** | .655** | .454** | 1 | .395** |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| my community support independent learning. | Correlation | | | | | | | | | | |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| There is a strong emphasis on rote learning in my educational environment. | Pearson Correlation | .336** | .245** | .429** | .247** | .357** | .316** | .417** | .281** | .395** | 1 |
| | Sig. (2-tailed) | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |

**. Correlation is significant at the 0.01 level (2-tailed).

***Relationship with Self-Motivation:***

The relationship between learner autonomy (self-motivation) and its influencing factors highlights several important correlations. Self-motivation for independent learning is significantly impacted by various educational factors.

A key indicator of self-motivation is the extent to which students are driven to learn without direct supervision. This intrinsic motivation correlates positively with seeking additional resources, with a Pearson correlation of 0.416 ($p < 0.001$). Students who are self-motivated also tend to seek supplementary materials. Similarly, there is a strong correlation between self-motivation and the perception that school teaching methods promote independent learning (0.281, $p < 0.001$), showing the influence of pedagogical approaches on motivation.

Regular feedback also supports self-motivation, with a significant correlation of 0.299 ($p < 0.001$). Feedback helps students maintain their motivation by improving their learning strategies. Access to resources, such as books and online materials, is positively correlated with self-motivation (0.209, $p = 0.006$), indicating that resources contribute to independent study motivation.

Technology access further supports self-motivation, with a correlation of 0.253 ($p = 0.001$), suggesting that technological tools aid in independent learning. Parental support and encouragement are also influential, with correlations of 0.358 ($p < 0.001$) and 0.361 ($p < 0.001$), respectively, highlighting the role of family in fostering self-motivation.

Cultural attitudes impact self-motivation as well, with a correlation of 0.326 ($p < 0.001$) indicating that supportive community values enhance motivation. In contrast, rote learning has a weaker correlation with self-motivation (0.093, $p = 0.227$), suggesting minimal direct impact.

**Table 3: Self-Motivation and Influencing Factors**

| | | I feel motivated to learn even without direct supervision. | I actively seek additional resources to enhance my learning. | The teaching methods at my school promote independent learning. | I receive regular feedback that helps me improve my learning strategies. | My school provides adequate resources (e.g., books, online materials) for self-directed learning. | I have access to technology that supports my independent learning (e.g., computers, internet). | My parents support my efforts to learn independently. | My parents encourage me to set and achieve my own learning goals. | The cultural attitudes in my community support independent learning. | There is a strong emphasis on rote learning in my educational environment. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I feel motivated to learn even without direct supervision. | Pearson Correlation | 1 | .416** | .281** | .299** | .209** | .253** | .358** | .361** | .326** | 0.093 |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.006 | 0.001 | 0.000 | 0.000 | 0.000 | 0.227 |
| I actively seek additional resources to enhance my learning. | Pearson Correlation | .416** | 1 | .370** | .480** | .415** | .422** | .310** | .456** | .425** | .227** |
| | Sig. (2-tailed) | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.003 |
| The teaching methods at my school promote independent learning. | Pearson Correlation | .281** | .370** | 1 | .469** | .400** | .481** | .554** | .286** | .721** | .429** |
| | Sig. (2-tailed) | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I receive regular feedback that helps me improve my learning strategies. | Pearson Correlation | .299** | .480** | .469** | 1 | .478** | .364** | .387** | .371** | .600** | .247** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| My school provides adequate resources (e.g., books, online materials) for self-directed learning. | Pearson Correlation | .209** | .415** | .400** | .478** | 1 | .529** | .432** | .342** | .448** | .357** |
| | Sig. (2-tailed) | 0.006 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I have access to technology that supports my independent learning (e.g., computers, internet). | Pearson Correlation | .253** | .422** | .481** | .364** | .529** | 1 | .436** | .426** | .539** | .316** |
| | Sig. (2-tailed) | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 |
| My parents support my efforts to learn independently. | Pearson Correlation | .358** | .310** | .554** | .387** | .432** | .436** | 1 | .514** | .655** | .417** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| My parents encourage me to set and achieve my own learning goals. | Pearson Correlation | .361** | .456** | .286** | .371** | .342** | .426** | .514** | 1 | .454** | .281** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 |
| The cultural attitudes in my community support independent learning. | Pearson Correlation | .326** | .425** | .721** | .600** | .448** | .539** | .655** | .454** | 1 | .395** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| There is a strong emphasis on rote learning in my educational environment. | Pearson Correlation | 0.093 | .227** | .429** | .247** | .357** | .316** | .417** | .281** | .395** | 1 |
| | Sig. (2-tailed) | 0.227 | 0.003 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |

**. Correlation is significant at the 0.01 level (2-tailed).

***Relationship with Decision-Making:***

The relationship between learner autonomy (decision-making) and its influencing factors is marked by significant correlations. Decision-making autonomy, where students select study topics and approaches to problems, is closely related to several educational factors.

A strong correlation exists between involvement in choosing study topics and deciding on problem-solving approaches, with a Pearson coefficient of 0.464 ($p < 0.001$). This suggests that students who have input into their learning content are also more likely to control their approach to academic challenges. This involvement is associated with teaching methods that promote independent learning (0.399, $p < 0.001$), indicating that pedagogical strategies supporting autonomy enhance decision-making.

Regular feedback significantly impacts decision-making, with a correlation of 0.480 ($p < 0.001$), highlighting the role of feedback in refining decision-making skills. Access to resources, such as books and online materials, supports decision-making autonomy with a correlation of 0.364 ($p < 0.001$), indicating that resource availability aids independent decision-making.

Access to technology also supports decision-making, with a correlation coefficient of 0.384 ($p < 0.001$). Technological tools help students manage their learning processes more effectively. Parental support and encouragement also play a role, with strong correlations of 0.445 ($p < 0.001$) and 0.376 ($p < 0.001$), respectively, reinforcing students' decision-making autonomy.

Cultural attitudes significantly influence decision-making autonomy, with a correlation of 0.520 ($p < 0.001$), suggesting that supportive cultural values contribute to students' ability to make educational choices. In contrast, rote learning has a weaker correlation with decision-making autonomy (0.324, $p < 0.001$), indicating limited impact.

**Table 4: Decision-Making and Influencing Factors**

| | | I am involved in choosing the topics I study in my courses. | I decide how to approach solving problems or assignments. | The teaching methods at my school promote independent learning. | I receive regular feedback that helps me improve my learning strategies. | My school provides adequate resources (e.g., books, online materials) for self-directed learning. | I have access to technology that supports my independent learning (e.g., computers, internet). | My parents support my efforts to learn independently. | My parents encourage me to set and achieve my own learning goals. | The cultural attitudes in my community support independent learning. | There is a strong emphasis on rote learning in my educational environment. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I am involved in choosing the topics I study in my courses. | Pearson Correlation | 1 | .464** | .399** | .480** | .364** | .384** | .445** | .376** | .520** | .324** |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I decide how to approach solving problems or assignments. | Pearson Correlation | .464** | 1 | .463** | .444** | .297** | .437** | .297** | .320** | .451** | .290** |
| | Sig. (2-tailed) | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| The teaching methods at my school promote independent learning. | Pearson Correlation | .399** | .463** | 1 | .469** | .400** | .481** | .554** | .286** | .721** | .429** |
| | Sig. (2-tailed) | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I receive regular feedback that helps me improve my learning strategies. | Pearson Correlation | .480** | .444** | .469** | 1 | .478** | .364** | .387** | .371** | .600** | .247** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| My school provides adequate resources (e.g., books, online materials) for self-directed learning. | Pearson Correlation | .364** | .297** | .400** | .478** | 1 | .529** | .432** | .342** | .448** | .357** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I have access to technology that supports my independent learning (e.g., computers, internet). | Pearson Correlation | .384** | .437** | .481** | .364** | .529** | 1 | .436** | .426** | .539** | .316** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 |
| My parents support my efforts to learn independently. | Pearson Correlation | .445** | .297** | .554** | .387** | .432** | .436** | 1 | .514** | .655** | .417** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| My parents encourage me to set and achieve my own learning goals. | Pearson Correlation | .376** | .320** | .286** | .371** | .342** | .426** | .514** | 1 | .454** | .281** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 |
| The cultural attitudes in my community support independent learning. | Pearson Correlation | .520** | .451** | .721** | .600** | .448** | .539** | .655** | .454** | 1 | .395** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| There is a strong emphasis on rote learning in my educational environment. | Pearson Correlation | .324** | .290** | .429** | .247** | .357** | .316** | .417** | .281** | .395** | 1 |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |

**. Correlation is significant at the 0.01 level (2-tailed).

***Relationship with Goal-Setting and Planning:***

The relationship between learner autonomy in goal-setting and planning and its influencing factors is characterized by significant correlations. This relationship highlights the role of various factors in enabling students to set and achieve learning goals effectively.

A strong positive correlation exists between setting specific learning goals and regularly reviewing and adjusting plans, with a Pearson coefficient of 0.545 ($p < 0.001$). This indicates that students who set clear goals are also likely to evaluate and modify their plans based on progress. Similarly, teaching methods that promote independent learning positively correlate with goal-setting and planning (0.328, $p < 0.001$), suggesting that supportive pedagogical approaches enhance goal management.

Regular feedback is crucial, with a correlation of 0.405 ($p < 0.001$) between feedback and goal-setting. Feedback helps students refine strategies and adapt plans, essential for achieving goals. Access to resources, such as books and online materials, has a moderate positive correlation (0.280, $p < 0.001$) with goal-setting, indicating that resources support planning and target achievement.

Technology access also supports goal-setting and planning with a correlation coefficient of 0.366 ($p < 0.001$). Technological tools aid independent learning and planning. Parental support and encouragement are important, with correlations of 0.418 ($p < 0.001$) and 0.385 ($p < 0.001$), respectively, showing that family support enhances goal-setting abilities.

Cultural attitudes supporting independent learning further facilitate goal-setting and planning, as indicated by a correlation of 0.397 ($p < 0.001$). Supportive cultural values reinforce autonomy and self-directed learning. Conversely, rote learning has a weaker correlation of 0.246 ($p < 0.001$) with goal-setting, suggesting limited impact.

**Table 5: Planning and Influencing Factors**

| | | I set specific goals for my learning and plan how to achieve them. | I regularly review and adjust my learning plans based on my progress. | The teaching methods at my school promote independent learning. | helps me improve my learning strategies. | resources (e.g., books, online materials) for self-directed learning. | I have access to technology that supports my independent learning (e.g., computers, internet). | My parents support my efforts to learn independently. | My parents encourage me to set and achieve my own learning goals. | The cultural attitudes in my community support independent learning. | There is a strong emphasis on rote learning in my educational environment. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I set specific goals for my learning and plan how to achieve them. | Pearson Correlation | 1 | .545** | .328** | .405** | .280** | .366** | .418** | .385** | .397** | .246** |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| I regularly review and adjust my learning plans based on my progress. | Pearson Correlation | .545** | 1 | .389** | .433** | .352** | .425** | .456** | .509** | .434** | .260** |
| | Sig. (2-tailed) | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| The teaching methods at my school promote independent learning. | Pearson Correlation | .328** | .389** | 1 | .469** | .400** | .481** | .554** | .286** | .721** | .429** |
| | Sig. (2-tailed) | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I receive regular feedback that helps me improve my learning strategies. | Pearson Correlation | .405** | .433** | .469** | 1 | .478** | .364** | .387** | .371** | .600** | .247** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| My school provides adequate resources (e.g., books, online materials) for self-directed learning. | Pearson Correlation | .280** | .352** | .400** | .478** | 1 | .529** | .432** | .342** | .448** | .357** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I have access to technology that supports my independent learning (e.g., computers, internet). | Pearson Correlation | .366** | .425** | .481** | .364** | .529** | 1 | .436** | .426** | .539** | .316** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 |
| My parents support my efforts to learn independently. | Pearson Correlation | .418** | .456** | .554** | .387** | .432** | .436** | 1 | .514** | .655** | .417** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| My parents encourage me to set and achieve my own learning goals. | Pearson Correlation | .385** | .509** | .286** | .371** | .342** | .426** | .514** | 1 | .454** | .281** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 |
| The cultural attitudes in my community support independent learning. | Pearson Correlation | .397** | .434** | .721** | .600** | .448** | .539** | .655** | .454** | 1 | .395** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| There is a strong emphasis on rote learning in my educational environment. | Pearson Correlation | .246** | .260** | .429** | .247** | .357** | .316** | .417** | .281** | .395** | 1 |
| | Sig. (2-tailed) | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |

### *4.3 The Relationship between Learner Autonomy with Its Outcomes*

***Self-Regulation and the Outcomes***

The connection between self-regulation and academic outcomes is evident through various facets of autonomous learning. Self-regulation, defined as setting and monitoring personal learning goals, is strongly correlated with several factors.

Students who believe in the benefits of self-regulation show significant correlations with goal-setting (0.486, $p < 0.001$) and progress monitoring (0.367, $p < 0.001$). This indicates that those who recognize the advantages of self-regulation tend to excel academically. Furthermore, the experience of learner autonomy enhances confidence, with a strong correlation (0.667, $p < 0.001$) between confidence and the belief that self-regulation improves performance. This confidence also relates closely to problem-solving abilities (0.606, $p < 0.001$), suggesting that self-regulated learners are more adept at overcoming challenges.

Additionally, self-directed learning correlates strongly with academic performance (0.636, $p < 0.001$), underscoring the role of self-regulation in achieving better academic outcomes. In summary, self-regulation, through goal-setting, progress monitoring, and confidence-building, is crucial for enhancing academic performance and fostering independent learning.

**Table 6: Self-Regulation and the Outcomes**

| | | I can set my own learning goals. | I can monitor my progress toward my learning goals. | learn autonomously positively affects my academic performance. | I perform better in assignments and exams when I take charge of my own learning. | my experiences with learner autonomy have increased my confidence in my abilities. | problems independently as a result of learning autonomously. |
|---|---|---|---|---|---|---|---|
| I can set my own learning goals. | Pearson Correlation | 1 | .492** | .486** | .394** | .445** | .441** |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I can monitor my progress toward my learning goals. | Pearson Correlation | .492** | 1 | .367** | .406** | .433** | .339** |
| | Sig. (2-tailed) | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 |
| I believe that my ability to learn autonomously positively affects my academic performance. | Pearson Correlation | .486** | .367** | 1 | .636** | .667** | .602** |
| | Sig. (2-tailed) | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| I perform better in assignments and exams when I take charge of my own learning. | Pearson Correlation | .394** | .406** | .636** | 1 | .642** | .489** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 |
| My experiences with learner autonomy have increased my confidence in my abilities. | Pearson Correlation | .445** | .433** | .667** | .642** | 1 | .606** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| I feel more capable of solving problems independently as a result of learning autonomously. | Pearson Correlation | .441** | .339** | .602** | .489** | .606** | 1 |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |

**. Correlation is significant at the 0.01 level (2-tailed).

***Self-Motivation and the Outcomes***

The link between self-motivation and academic outcomes is also significant. Learner autonomy, particularly the ability to learn independently, correlates with positive academic results. Students who are motivated to learn independently show strong correlations with recognizing the benefits of autonomy (0.304, $p < 0.001$) and seeking additional resources (0.451, $p < 0.001$). This suggests that self-motivated students are more likely to benefit from autonomous learning.

Autonomy enhances confidence, with a strong correlation (0.667, $p < 0.001$) between this confidence and the belief in its positive impact on performance. This confidence is further supported by problem-solving abilities (0.606, $p < 0.001$), indicating that autonomous learners are more capable of addressing challenges. The relationship between independent learning and academic performance (0.636, $p < 0.001$) reinforces the importance of autonomy for academic success.

**Table 7: Self-Motivation and the Outcomes**

| | | I feel motivated to learn even without direct supervision. | I actively seek additional resources to enhance my learning. | I believe that my ability to learn autonomously positively affects my academic performance. | assignments and exams when I take charge of my own learning. | My experiences with learner autonomy have increased my confidence in my abilities. | solving problems independently as a result of learning autonomously. |
|---|---|---|---|---|---|---|---|
| I feel motivated to learn even without direct supervision. | Pearson Correlation | 1 | .416** | .304** | .389** | .412** | .259** |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| I actively seek additional resources to enhance my learning. | Pearson Correlation | .416** | 1 | .451** | .434** | .440** | .487** |
| | Sig. (2-tailed) | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 |
| I believe that my ability to learn autonomously | Pearson Correlation | .304** | .451** | 1 | .636** | .667** | .602** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| positively affects my academic performance. | Sig. (2-tailed) | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| I perform better in assignments and exams when I take charge of my own learning. | Pearson Correlation | .389** | .434** | .636** | 1 | .642** | .489** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 |
| My experiences with learner autonomy have increased my confidence in my abilities. | Pearson Correlation | .412** | .440** | .667** | .642** | 1 | .606** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| I feel more capable of solving problems independently as a result of learning autonomously. | Pearson Correlation | .259** | .487** | .602** | .489** | .606** | 1 |
| | Sig. (2-tailed) | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | |

**. Correlation is significant at the 0.01 level (2-tailed).

***Decision-Making and the Outcomes***

Decision-making is another key aspect of learner autonomy linked to positive academic outcomes. Students involved in choosing study topics show correlations with the belief in autonomy's benefits (0.412, $p < 0.001$) and problem-solving capabilities (0.447, $p < 0.001$). This indicates that having a say in learning topics enhances confidence and effectiveness in academics.

The ability to decide on problem-solving approaches correlates positively with the belief in autonomy (0.485, $p < 0.001$) and increased confidence (0.467, $p < 0.001$). This emphasizes the role of decision-making in improving autonomous learning outcomes. The strong correlation (0.636, $p < 0.001$) between autonomous learning beliefs and better academic performance further supports this.

**Table 8: Decision Making and the Outcomes**

| | | I am involved in choosing the topics I study in my courses. | I decide how to approach solving problems or assignments. | I believe that my ability to learn autonomously positively affects my academic performance. | I perform better in assignments and exams when I take charge of my own learning. | My experiences with learner autonomy have increased my confidence in my abilities. | I feel more capable of solving problems independently as a result of learning autonomously. |
|---|---|---|---|---|---|---|---|
| I am involved in choosing the topics I study in my courses. | Pearson Correlation | 1 | .464** | .412** | .439** | .480** | .447** |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I decide how to approach solving problems or assignments. | Pearson Correlation | .464** | 1 | .485** | .424** | .467** | .456** |
| | Sig. (2-tailed) | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 |
| I believe that my ability to learn autonomously positively affects my academic performance. | Pearson Correlation | .412** | .485** | 1 | .636** | .667** | .602** |
| | Sig. (2-tailed) | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| I perform better in assignments and exams when I take charge of my own learning. | Pearson Correlation | .439** | .424** | .636** | 1 | .642** | .489** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 |
| My experiences with learner autonomy have increased my confidence in my abilities. | Pearson Correlation | .480** | .467** | .667** | .642** | 1 | .606** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| I feel more capable of solving problems independently as a result of learning autonomously. | Pearson Correlation | .447** | .456** | .602** | .489** | .606** | 1 |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |

**. Correlation is significant at the 0.01 level (2-tailed).

***Planning and the Outcomes***

The relationship between goal-setting, plan adjustment, and academic outcomes is clear. Goal-setting correlates significantly with adjusting learning plans (0.545, $p < 0.001$), indicating that goal-oriented students are more likely to adapt their strategies based on progress. Goal-setting is also linked to the belief in autonomous learning's benefits (0.336, $p < 0.001$), better performance (0.386, $p < 0.001$), and increased confidence (0.439, $p < 0.001$).

Regularly reviewing and adjusting learning plans correlates strongly with believing in the benefits of autonomy (0.503, $p < 0.001$), better performance (0.563, $p < 0.001$), and increased confidence (0.596, $p < 0.001$). This suggests that adaptive learners are more capable of tackling academic challenges.

The belief in autonomy's positive impact is strongly associated with better assignment performance (0.636, $p < 0.001$), confidence (0.667, $p < 0.001$), and problem-solving skills (0.602, $p < 0.001$). Furthermore, taking charge of learning correlates with increased confidence (0.642, $p < 0.001$) and problem-solving abilities (0.489, $p < 0.001$), demonstrating that self-directed learners not only perform better but also develop greater confidence and problem-solving skills.

**Table 9: Planning and the Outcome**

| | | I set specific goals for my learning and plan how to achieve them. | I regularly review and adjust my learning plans based on my progress. | I believe that my ability to learn autonomously positively affects my academic performance. | I perform better in assignments and exams when I take charge of my own learning. | My experiences with learner autonomy have increased my confidence in my abilities. | I feel more capable of solving problems independently as a result of learning autonomously. |
|---|---|---|---|---|---|---|---|
| I set specific goals for my learning and plan how to achieve them. | Pearson Correlation | 1 | .545** | .336** | .386** | .439** | .360** |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| I regularly review and adjust my learning plans based on my progress. | Pearson Correlation | .545** | 1 | .503** | .563** | .596** | .544** |
| | Sig. (2-tailed) | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 |
| I believe that my ability to learn autonomously positively affects my academic performance. | Pearson Correlation | .336** | .503** | 1 | .636** | .667** | .602** |
| | Sig. (2-tailed) | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| I perform better in assignments and exams when I take charge of my own learning. | Pearson Correlation | .386** | .563** | .636** | 1 | .642** | .489** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 |
| My experiences with learner autonomy have increased my confidence in my abilities. | Pearson Correlation | .439** | .596** | .667** | .642** | 1 | .606** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| I feel more capable of solving problems independently as a result of learning autonomously. | Pearson Correlation | .360** | .544** | .602** | .489** | .606** | 1 |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |

**. Correlation is significant at the 0.01 level (2-tailed).

## 5. Conclusion and Recommendation

### *5.1 Conclusion:*

Based on the comprehensive analysis of learner autonomy among students at Hun Sen Krong Tep Nimith Pailin High School, several conclusions can be drawn regarding their autonomy in learning:

***Technical Perspective of Learner Autonomy:*** Students' perceptions of their learning environment indicate that while there is some support for independent learning through resources like books and online materials, access to technology such as computers and the internet is more variable. The effectiveness of teaching methods in promoting independent learning also shows considerable variability, suggesting that the current environment may not be uniformly supportive of all aspects of autonomous learning.

***Psychological Perspective of Learner Autonomy:*** (1) Self-Regulation: Students show moderate consistency in their self-regulation abilities, with a reasonable capacity for setting goals and monitoring progress. However, there is variability in how effectively they engage in setting their own learning goals and adapting their plans based on progress. This suggests that while some students are effective at self-regulation, others may benefit from additional support or training in these areas. (2) Self-Motivation: Students demonstrate strong self-motivation, particularly in seeking additional

resources and learning without direct supervision. This strong motivation reflects a positive attitude towards autonomous learning but is coupled with variability in how students use additional resources, suggesting differing levels of engagement with supplementary learning materials.

***Political Perspective of Learner Autonomy:*** Students exhibit variability in their involvement in decision-making processes regarding their studies. They show more consistency in deciding how to approach problems or assignments compared to choosing study topics, which indicates a potential area for improvement in fostering greater student agency in all aspects of their learning process.

***Sociocultural Perspective of Learner Autonomy:*** Parental support for independent learning is relatively strong and consistent, which positively influences students' autonomy. Cultural attitudes also play a significant role, with positive community values supporting independent learning, while rote learning practices have a variable impact. The presence of supportive cultural attitudes aligns with students' perceptions of autonomy, but the emphasis on rote learning may limit the full development of autonomous learning skills.

***Influencing Factors on Learner Autonomy:*** (1) Resources and Feedback: Access to educational resources and regular feedback significantly support learner autonomy. Students who perceive their learning environment as supportive, with adequate resources and constructive feedback, tend to show higher levels of autonomy. Conversely, variability in technological access and feedback highlights areas where improvements could be made to better support all students. (2) Parental Involvement: The consistency in parental support and encouragement for goal-setting enhances students' autonomous learning behaviors. This underscores the importance of involving families in fostering learner autonomy.

***Outcomes of Learner Autonomy:*** (1) Academic Performance: Students believe that their autonomous learning positively affects their academic performance, especially in assignments and exams. This suggests that efforts to enhance learner autonomy could lead to better academic outcomes. (2) Personal Development: While there is a strong belief in increased confidence due to learner autonomy, perceptions of improved problem-solving skills are more variable. This indicates that while autonomy may boost confidence, additional strategies may be needed to enhance problem-solving abilities through autonomous learning.

### *5.2 Recommendation*

Based on the findings regarding learner autonomy at Hun Sen Krong Tep Nimith Pailin High School, here are tailored recommendations for students, educators, parents, and policymakers:

***Recommendation for Students***

- **Enhance Self-Regulation**: Students should focus on setting specific, achievable learning goals and regularly monitor their progress. Utilizing tools like planners or digital apps to track goals and progress can be helpful.
- **Seek Additional Resources**: Actively seek out supplementary learning materials and resources beyond the classroom. This can include online resources, study groups, and library materials.
- **Improve Decision-Making Skills**: Work on making more informed decisions about your learning process. Practice choosing study methods and topics that align with your interests and strengths.
- **Engage with Feedback**: Use feedback from teachers to adjust your learning strategies and improve your performance. View feedback as a tool for growth rather than criticism.

***Recommendation for Educators***

- **Promote Independent Learning**: Incorporate teaching methods that encourage self-directed learning, such as project-based assignments and opportunities for independent research.
- **Provide Regular Feedback**: Offer constructive feedback that helps students refine their learning strategies. Ensure that feedback is timely and actionable.
- **Facilitate Resource Access**: Ensure that students have adequate access to resources, including books, online materials, and technology. Consider creating or supporting resource centers within the school.
- **Encourage Parental Involvement**: Engage with parents to encourage them to support their children's learning goals and independent study efforts.

***Recommendation for Parents/Caregivers***

- **Support Independent Learning**: Encourage your child to take charge of their learning by setting their own goals and seeking additional resources. Provide a supportive environment at home that facilitates study and self-directed learning.
- **Provide Encouragement**: Motivate your child to stay committed to their learning goals and celebrate their achievements to boost their confidence.
- **Engage with School**: Communicate with teachers and participate in school events to stay informed about your child's educational progress and how you can support their autonomy.

- **Promote Positive Attitudes**: Foster an environment that values education and supports independent learning. Encourage your child to view learning as a continuous and self-driven process.

***Recommendation for Policy Makers***

- **Support Autonomous Learning Practices**: Develop and implement policies that encourage educational practices promoting learner autonomy, such as flexible curricula and opportunities for independent study.
- **Invest in Resources**: Allocate funding for resources that support self-directed learning, including technological tools, library materials, and training for educators on promoting autonomy.
- **Encourage Teacher Training**: Provide professional development for teachers focused on strategies to foster learner autonomy and self-regulated learning.
- **Facilitate Parent and Community Engagement**: Create programs that involve parents and the community in supporting autonomous learning. Provide resources and workshops to help parents understand and support their children's learning.

By addressing these areas, students can improve their learner autonomy, educators can enhance their teaching practices, parents can better support their children, and policymakers can create a more conducive environment for autonomous learning.

**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 ($10^{th}$ Grade, $11^{th}$ Grade, or $12^{th}$ 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:**
    - I can set my own learning goals.
    - I can monitor my progress toward my learning goals.
2. **Self-Motivation:**
    - I feel motivated to learn even without direct supervision.
    - I actively seek additional resources to enhance my learning.

3. **Decision-Making:**
    - I am involved in choosing the topics I study in my courses.
    - I decide how to approach solving problems or assignments.
4. **Goal-Setting and Planning:**
    - I set specific goals for my learning and plan how to achieve them.
    - I regularly review and adjust my learning plans based on my progress.

**Section 3: Influencing Factors**

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

**Section 4: Outcomes**

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

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