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FOSTERING LEARNER AUTONOMY THROUGH ICT IN A MEXICAN UNIVERSITY CONTEXT

Mtra. Lee Estrella Gabriela Gyomara[1]
Universidad de Sonora
gabriela.lee@unison.mx
ORCID: https://orcid.org/0000-0001-7173-7286

Dr. Laurian Pacheco David[2]
Instituto Tecnológico de Sonora
david.laurian20518@potros.itson.edu.mx
ORCID: https://orcid.org/0009-0003-5211-6953

Dra. Armenta Zazueta Lizeth[3]
Instituto Tecnológico de Sonora
larmenta@itson.edu.mx
ORCID: https://orcid.org/0000-0002-9073-2461

Dra. Pacheco Olguín María Elena[4]
Instituto Tecnológico de Sonora
Maria.pacheco72397@potros.itson.edu.mx
ORCID: https://orcid.org/0009-0003-8445-5706

Mtra. Laurian Pacheco Caissa[5]
Instituto Tecnológico de Sonora
caissa.laurian249647@potros.itson.edu.mx
ORCID: https://orcid.org/0009-0008-6984-6211

ABSTRACT
Learner autonomy is recognized as a key competence in higher education, particularly in language learning, where the use of Information and Communication Technology (ICT) offers both opportunities and challenges. This study aimed to analyze the autonomous learning strategies employed by Mexican university students of English as a foreign language. A quantitative, non-experimental, cross-sectional, correlational design was applied with a sample of 33 students from the Universidad de Sonora, Campus Navojoa. Data were collected through an adapted version of the Strategy Inventory for Language Learning (SILL; Oxford, 1990), including six dimensions and 43 items. Results indicated a medium level of strategy use (M = 3.04), with affective strategies being the most frequently employed (M = 3.41) and memory strategies the least (M = 2.74). Correlation analysis showed strong associations among cognitive, metacognitive, affective, and social strategies, while memory strategies appeared more independent. The findings suggest that students rely mainly on emotional and social resources to sustain autonomy, highlighting the need for pedagogical interventions that foster affective regulation, peer collaboration, and the strengthening of metacognitive skills.

KEYWORDS
Autonomy, English, Learning strategies, University students, ICT

FOMENTANDO LA AUTONOMÍA DEL ESTUDIANTE MEDIANTE LAS TIC EN UN CONTEXTO UNIVERSITARIO MEXICANO

RESUMEN
La autonomía del aprendizaje se reconoce como una competencia esencial en la educación superior, particularmente en el aprendizaje de lenguas, donde el uso de las Tecnologías de la Información y la Comunicación (TIC) ofrece oportunidades y desafíos. El presente estudio tuvo como objetivo analizar las estrategias de aprendizaje autónomo empleadas por estudiantes universitarios mexicanos de inglés como lengua extranjera. Se utilizó un diseño cuantitativo, no experimental, transversal y correlacional, con una muestra de 33 estudiantes de la Universidad de Sonora, Campus Navojoa. Se aplicó un cuestionario adaptado del Strategy Inventory for Language Learning (SILL; Oxford, 1990), compuesto por seis dimensiones y 43 ítems. Los resultados muestran un nivel medio de uso de estrategias (M = 3.04), destacando las estrategias afectivas como las más empleadas (M = 3.41) y las de memoria como las menos frecuentes (M = 2.74). El análisis de correlaciones reveló fuertes asociaciones entre las estrategias cognitivas, metacognitivas, afectivas y sociales, mientras que las de memoria operaron de forma más independiente. Se concluye que los estudiantes recurren principalmente a recursos emocionales y sociales para sostener su autonomía, lo cual subraya la necesidad de diseñar intervenciones pedagógicas que integren la regulación afectiva, la colaboración entre pares y el fortalecimiento de las habilidades metacognitivas.

PALABRAS CLAVE
Autonomía, Estrategias de aprendizaje, Estudiantes universitarios, Inglés, TIC

INTRODUCTION

Learner autonomy has long been recognized as a cornerstone of effective language education, particularly in higher education contexts where students are expected to assume responsibility for their own progress (Benson, 2011; Little, 2020). Defined as the capacity to take control of one's learning by setting goals, selecting strategies, and monitoring outcomes, autonomy is closely linked to self-regulation and lifelong learning (Oxford, 1990; Schunk & DiBenedetto, 2020). In the digital era, Information and Communication Technology (ICT) has become an indispensable mediator of this process. ICT not only expands access to authentic resources and interactive environments, but also enables learners to practice outside the classroom and personalize their study routines (Kic-Drgas & Kılıçkaya, 2024; Khoudri, 2024).

Despite the proliferation of ICT tools in English Language Teaching (ELT), evidence suggests that many students engage with these technologies primarily for receptive or entertainment purposes, such as consuming media or consulting quick online references, rather than systematically applying strategies that promote autonomous and sustained learning (García Botero et al., 2019; Toffoli & Sockett, 2021). This gap between access and strategic use raises critical questions: do learners use ICT in ways that genuinely enhance autonomy, or do these tools simply increase exposure without fostering deliberate self-regulation? Addressing this issue is especially relevant in Mexico, where digital resources are

widely available but often underutilized for academic purposes, and where universities are seeking effective ways to integrate ICT into curricula to improve student outcomes (Reinders & Benson, 2017).

The present study examines how undergraduate students at a Mexican public university employ ICT in relation to learner autonomy, focusing on the extent to which self-regulatory strategies are present in their digital practices. By combining survey data from the Spanish-adapted Strategy Inventory for Language Learning (SILL) with semi-structured interviews, the research provides both quantitative and qualitative insights into current behaviors. Beyond its descriptive value, the study contributes to ongoing debates on how educational institutions can design interventions that transform students' awareness of ICT into intentional, goal-directed action. The article proceeds as follows: the next section reviews theoretical perspectives on autonomy and ICT, followed by a detailed account of methodology; results are then presented and discussed in light of existing literature; and finally, the paper concludes with implications for educators and for social-marketing–inspired initiatives that aim to foster sustainable learner autonomy.

THEORETICAL FRAMEWORK

Learner Autonomy

The concept of learner autonomy has undergone a significant evolution since it was first articulated by Holec (1981), who defined it as the capacity to take charge of one's learning. Over the past four decades, scholars have refined and expanded this definition, emphasizing its multidimensional nature. Autonomy is now understood not only as an individual's ability to set goals and self-direct learning, but also as a socially and contextually situated construct (Benson, 2011; Little, 2020). In higher education, autonomy has become a central competence, closely linked to employability, adaptability, and lifelong learning in a world characterized by rapid technological and social change (Lai, 2017). Recent work has highlighted that autonomy is rarely exercised in isolation; rather, it emerges within a dynamic ecosystem shaped by cultural expectations, institutional frameworks, and available resources (Borg & Al-Busaidi, 2012). Thus, learner autonomy should be conceived as an ecological process that integrates personal agency with external affordances and constraints.

A further development in the autonomy debate relates to its ethical and pedagogical implications. Scholars argue that promoting autonomy is not only a matter of fostering individual responsibility but also of creating educational environments that empower learners to make informed choices (Ushioda, 2020). This perspective resonates strongly in language education, where autonomy is linked to the ability to select strategies, critically evaluate sources, and sustain motivation in self-directed contexts. However, autonomy remains uneven across learners, with significant variation depending on motivation, prior educational experiences, and access to resources. This variability underscores the importance of exploring how institutional and technological factors shape the actual exercise of autonomy in specific learning contexts.

Self-Regulation and Learning Strategies

Autonomy is inseparable from self-regulation, which encompasses learners' ability to plan, monitor, and evaluate both cognitive and affective processes during learning (Schunk & DiBenedetto, 2020). Self-regulated learning theory builds on the premise that effective learners deploy strategies consciously and adaptively to manage challenges, sustain effort, and achieve long-term goals. Oxford's (1990) taxonomy of language learning strategies continues to be influential, particularly in its classification of cognitive, metacognitive, social, and affective strategies. While cognitive strategies involve processing and practicing information, metacognitive strategies such as goal setting, planning, and self-reflection provide the foundation for deliberate autonomy. Social and affective strategies, including collaboration and emotional regulation, further illustrate the complex interplay of factors that enable sustained learning (Ushioda, 2020).

Nevertheless, research consistently shows that while learners frequently employ receptive strategies such as note-taking or repetition, the systematic use of metacognitive and self-regulatory strategies is less common (García Botero et al., 2019). This gap suggests that having access to tools or strategies is not equivalent to deploying them strategically. Moreover, learners often rationalize their behaviors in

ways that maintain ineffective habits, such as justifying procrastination or overestimating the effectiveness of multitasking with digital devices. Contemporary studies have emphasized the role of self-regulation as a mediating variable between motivation, strategy use, and academic performance, highlighting the need for pedagogical interventions that explicitly train students in these skills (Panadero, 2017; Dörnyei & Ryan, 2015). In this sense, autonomy cannot be reduced to a personality trait; it is a competence that requires scaffolding, reflection, and sustained practice, particularly in technology-rich environments where distractions compete with purposeful learning.

ICT and Autonomy in ELT

The expansion of Information and Communication Technology (ICT) has profoundly altered the possibilities for language learning, providing learners with unprecedented access to authentic resources, interactive platforms, and mobile applications. Scholars describe ICT as offering digital affordances, that is, possibilities for action that learners may perceive and exploit to enhance learning (Kic-Drgas & Kılıçkaya, 2024). Examples include the use of mobile apps for vocabulary practice, online platforms for collaboration, and multimedia resources for immersive exposure to the target language. In principle, such tools align with the principles of learner autonomy by enabling self-directed access to materials, immediate feedback, and opportunities for practice beyond the classroom (Reinders & Benson, 2017).

However, research cautions against assuming that access to ICT automatically leads to autonomy. Studies have shown that learners frequently engage with ICT in informal and incidental ways, focusing on receptive activities such as watching videos or using translation tools, without engaging in systematic goal setting or self-monitoring (Toffoli & Sockett, 2021). Guo & Lee (2023) found that university students valued ICT resources for their convenience and motivational appeal, but often lacked strategies to integrate them into structured learning routines. This highlights the tension between availability and strategic use: ICT offers immense potential, yet learners may fail to realize this potential unless guided by explicit pedagogical frameworks. In contexts like Mexico, where access to technology is widespread but often mediated by social and cultural factors, the challenge lies not in introducing ICT but in enabling students to use it deliberately to foster autonomy.

Theoretical Orientation of the Study

In light of these perspectives, the present study adopts an integrated theoretical model that combines Oxford's (1990) strategy framework with contemporary theories of self-regulation (Schunk & DiBenedetto, 2020) and insights from digital learning research. This orientation acknowledges that autonomy is best understood at the intersection of individual regulation and technological mediation. Learners may access a wide range of ICT resources, but without deliberate strategies and reflective regulation, these resources may remain underutilized or misapplied. By framing autonomy as both a personal competence and a socially situated process mediated by ICT, the study positions itself within the broader debate on digital learning in higher education. This framework provides a robust foundation for analyzing how Mexican university students use ICT in ways that either enhance or limit their autonomy, and it underscores the importance of designing pedagogical interventions that convert incidental exposure into intentional, goal-directed learning practices.

METHODOLOGY

The present study was developed under a quantitative, non-experimental, cross-sectional, descriptive–correlational design. This methodological orientation was appropriate because it enabled the exploration of autonomous learning strategies employed by undergraduate students in their authentic educational setting, without manipulating variables or imposing artificial conditions. The descriptive scope allowed for the characterization of the strategies most frequently used, while the correlational perspective provided evidence of the associations among the six dimensions under study. Taken together, these approaches facilitated the identification of patterns that reflect how students regulate their learning processes, particularly when mediated by Information and Communication Technologies (ICT).

The research was conducted with undergraduate students from the Universidad de Sonora, Campus Navojoa. This context is especially relevant because it integrates learners from diverse socioeconomic and cultural backgrounds, thereby offering a rich perspective on autonomy in academic environments

where ICT is widely available but often underutilized as a resource for structured learning. Due to institutional and logistical considerations, a non-probabilistic convenience sampling strategy was employed. While this sampling method does not permit generalization to the entire student population, it is widely recognized in educational research as a valid approach for exploratory studies of this nature. Moreover, the decision to use this strategy ensured access to participants who were directly engaged in the educational dynamics under investigation, thereby enhancing the contextual relevance of the findings.

The final sample was composed of 33 students, 25 women and 8 men, ranging in age from 19 to 26 years. Participants represented 6 degree programs and 8 academic semesters, ensuring variability in academic progression. With respect to English language proficiency, students self-reported their level according to the institutional placement scale. Interestingly, despite the availability of 7 possible bands, their responses concentrated in only 2, a result that highlights the limited perception of progress and points to an area of concern in the development of language autonomy. This distribution underscores the need to strengthen institutional mechanisms that foster more gradual and consistent advancement in language learning outcomes.

The construct of autonomous learning strategies was operationalized using six dimensions derived from Oxford's (1990) Strategy Inventory for Language Learning (SILL): memory, cognitive, compensation, metacognitive, affective, and social strategies. Each dimension represents a specific facet of autonomy, from the retention and practice of linguistic knowledge to the regulation of motivation and the use of peer interaction as a learning resource. The Autonomous Learning Strategies Questionnaire for University Students was adapted from the original SILL and contextualized to the Mexican higher education environment. The instrument consisted of forty-three items distributed across the six dimensions, each evaluated on a five-point Likert scale ranging from 1 (Never or almost never true of me) to 5 (Always or almost always true of me). Table 1 presents the structure of the instrument, including the operational definition of each dimension, the number of items, and an example.

Table 1

Structure of the Learning Strategies Instrument

Dimension	Definition	No. of items	Example item
Memory	Techniques to retain and recall new vocabulary and grammar	8	"I repeat or write a word many times to memorize it."
Cognitive	Mental processes to understand, analyze, and use language	10	"I look for similarities and differences between English and my native language."
Compensation	Strategies to overcome gaps in knowledge	4	"When I don't know a word, I try to guess its meaning from context."
Metacognitive	Planning, monitoring, and evaluating learning	5	"I set clear learning objectives I can achieve."
Affective	Managing emotions and motivation in the learning process	4	"Even if I feel anxious, I try to relax when using English."
Social	Interaction with peers and teachers to improve learning	7	"I ask my classmates or teacher to correct my mistakes."

Note. Adapted from Oxford (1990). Items rated on a 5-point Likert scale.

To evaluate the internal consistency of the Autonomous Learning Strategies Questionnaire adapted from Oxford's SILL, Cronbach's alpha coefficients were calculated for each of the six dimensions as well as for the total scale. This procedure made it possible to determine the degree to which the items within each dimension measured the same underlying construct. The results are presented in Table 2.

Table 2

Cronbach's alpha coefficients for the Strategy Inventory for Language Learning (N = 33)

Dimension	Alfa de Cronbach
I. Memory	.70
II. Cognitive	.85
III. Compensation	.74
IV. Metacognitive	.72
V. Affective	.68
VI. Social	.73
Total scale	**.91**

Note. Internal consistency coefficients (Cronbach's α). Analyses performed in Jamovi v. 2.6.26

The internal consistency of the instrument was assessed through Cronbach's alpha coefficients for each of the six dimensions of the Strategy Inventory for Language Learning (SILL) as well as for the total scale. As displayed in Table 2, alpha values ranged from .68 (Affective) to .85 (Cognitive), while the global coefficient reached .91. Following conventional benchmarks (Tavakol & Dennick, 2011), these results indicate that the scale as a whole demonstrates excellent reliability, with individual dimensions achieving acceptable to good internal consistency. The lower coefficients observed in the Affective (.68) and Memory (.70) dimensions are consistent with previous studies using the SILL, where items related to emotional regulation or rote memorization often yield more variable responses across learners (Pawlak & Oxford, 2018). In contrast, the Cognitive dimension obtained the highest reliability (.85), reflecting the relative stability of learners' analytical and processing strategies. The overall pattern of coefficients supports the robustness of the instrument in this context and justifies its use for exploring the multidimensional construct of autonomous learning strategies among Mexican university students.

The procedure for data collection followed several carefully structured stages. Authorization was first obtained from university authorities to guarantee institutional support and adherence to ethical requirements. The instrument was then digitalized and distributed through official communication channels, which ensured accessibility while minimizing disruptions to students' academic schedules. Participation was voluntary and anonymous, and informed consent was obtained electronically prior to completing the questionnaire. Ethical principles of confidentiality, respect for participants' autonomy, and responsible management of information were strictly followed. Data collection took place over a two-week period, after which incomplete responses were discarded, and the database was carefully reviewed for errors or inconsistencies.

For the analysis, Jamovi v. 2.6.26 software was employed. Descriptive statistics, including frequencies, means, and standard deviations, were first calculated to characterize the overall use of strategies and to highlight the most and least frequent practices. Pearson's correlation analysis was subsequently applied to examine the relationships among the six strategy dimensions, with the level of statistical significance set at $\alpha = .05$. This analytic sequence enabled the identification of non-trivial associations that reveal how strategies co-occur and reinforce one another in the development of autonomy. By combining descriptive and correlational perspectives, the methodology not only captured the general tendencies of the sample but also provided insights into the structural interdependence of strategies in the context of ICT-mediated English learning.

RESULTS

General descriptive data of the sample

The sample comprised 33 undergraduate students enrolled at the Universidad de Sonora, Campus Navojoa. Participants' mean age was 22.18 years (SD = 1.94), with a range from 19 to 26 years. A higher proportion of participants identified as female (n = 25, 75.8%) than male (n = 8, 24.2%). Regarding English course level, most participants reported Level 3 (n = 31, 93.9%); 2 students reported Introductory level (6.1%). Distribution across degree programs and semesters is provided in the supplementary material.

Table 3

General characteristics of the participants (N = 33)

Variable	Category	n	%
Gender	Female	25	75.8
	Male	8	24.2
English level	Level 3	31	93.9
	Introductory	2	6.1
Age (years)	M (SD)	22.18 (1.94)	
Range		19-26	

Note. Frequencies by academic program and semester are reported in the supplementary material.

Overall use of autonomous learning strategies

The composite score of the adapted Strategy Inventory for Language Learning (SILL; Oxford, 1990) indicated a medium level of autonomous strategy use among participants (N = 33). The total-scale mean was M = 3.04 (SD = 0.53), with individual scores ranging from 1.92 to 4.00 on the five-point Likert scale (see Table 4). The instrument's total internal consistency was excellent (Cronbach's α = .91), although dimension-level coefficients varied (see Table 2). These results suggest that while the students demonstrate a moderate inclination toward autonomous learning, their practices remain uneven and reveal areas that would benefit from targeted pedagogical reinforcement.

The classification of the observed mean (M = 3.04) corresponds to an intermediate/"medium" utilisation of strategies according to the instrument's response metric and prior SILL-based studies (Oxford, 1990; Oxford, 2017). This medium-level result is consistent with prior research showing that, in higher-education EFL contexts, learners often report moderate engagement with strategy repertoires and variable integration of strategies into sustained self-regulated routines (Panadero, 2017; García Botero et al., 2019). In the present sample, the aggregated score reflects a general tendency for students to apply strategies with moderate frequency rather than to display uniformly high or low autonomy. This finding reinforces the need to design pedagogical interventions that foster greater depth, consistency, and transferability in the use of learning strategies across academic tasks.

Table 4

Descriptive statistics of the total scale of autonomous learning strategies (N = 33)

Scale	M	SD	Min	Max	Level
Total strategies	3.04	0.53	1.92	4.00	Medium

Note. Descriptive statistics calculated from the participants' responses to the adapted SILL questionnaire.

Table 4 displays the descriptive statistics for the total SILL score and confirms the moderate dispersion of responses (SD = 0.53). The pattern observed here is congruent with contemporary findings on out-of-class, technology-mediated learning, where access to digital affordances does not automatically translate into consistently high self-regulated strategy use (Guo & Lee, 2023; Kic-Drgas & Kılıçkaya, 2024). The reliability of the total instrument supports the interpretation of the composite score as a stable index of strategy use for this sample; dimension-level reliability coefficients (Table 2) are reported for transparency and to inform subsequent interpretation and discussion. Moreover, this alignment between dispersion, reliability, and prior evidence underscores the robustness of the measurement process and strengthens confidence in the representativeness of the findings.

Analysis by SILL dimension

Dimension-level descriptive statistics are presented in Table 5. Affective strategies yielded the highest mean (M = 3.41, SD = 0.68), while Memory strategies had the lowest mean (M = 2.74, SD = 0.59). Cognitive, Compensation, Metacognitive, and Social strategies were in the medium range. This configuration suggests that students are relatively more attuned to regulating emotions and motivation than to employing systematic techniques for retention, which may limit their long-term linguistic development. At the same time, the predominance of affective over memory-oriented strategies reflects a pattern identified in similar studies, where emotional self-regulation often becomes a compensatory mechanism in contexts of limited strategic variety.

Table 5

Descriptive statistics by dimension of autonomous learning strategies (N = 33)

Dimension	M	SD	Min	Max	Level
Memory	2.74	0.59	1.75	4.25	Medium
Cognitive	3.04	0.74	1.60	4.60	Medium
Compensation	3.18	0.66	1.50	4.75	Medium
Metacognitive	3.16	0.69	1.40	4.80	Medium
Affective	3.41	0.68	2.00	4.50	High
Social	2.99	0.66	1.71	4.14	Medium
Total	3.04	0.53	1.92	4.00	Medium

Note. Frequencies by academic program and semester are reported in the supplementary material.

Correlation results

Pearson correlation coefficients among the six SILL dimensions are displayed in Table 6. The analysis revealed a pattern of positive associations, several of which were statistically significant. The strongest associations were observed between Cognitive and Metacognitive ($r = .695$, $p < .001$), Cognitive and Memory ($r = .622$, $p < .001$), and Metacognitive and Affective ($r = .650$, $p < .001$). Correlations involving Memory were generally weaker and, in some cases, non-significant (e.g., Memory–Compensation $r = .260$, $p = .145$).

Moderate-to-strong associations also emerged between Compensation strategies and the remaining dimensions, including Cognitive ($r = .539$, $p = .001$), Metacognitive ($r = .489$, $p = .004$), Affective ($r = .470$, $p = .006$), and Social ($r = .401$, $p = .021$). In addition, Affective and Social strategies demonstrated a robust correlation ($r = .571$, $p < .001$). These interrelations highlight the tendency of learners to mobilize strategies in complementary ways, suggesting that emotional regulation, interactional resources, and compensatory mechanisms often function as mutually reinforcing pillars of autonomous learning.

In contrast, correlations involving Memory strategies were comparatively weaker. While the association with Metacognitive strategies was significant ($r = .491$, $p = .004$), relationships with Compensation ($r = .260$, $p = .145$), Affective ($r = .269$, $p = .130$), and Social strategies ($r = .307$, $p = .083$) did not reach the conventional level of statistical significance.

Table 6

Pearson correlation matrix among dimensions of autonomous learning strategies (N = 33)

Dimension	1. Memory	2. Cognitive	3. Compensation	4. Metacognitive	5. Affective	6. Social
1. Memory	-	.622***	.260	.491**	.269	.307
2. Cognitive	.622***	-	.539**	.695***	.597***	.587***
3. Compensation	.260	.539**	-	.489**	.470**	.401*
4. Metacognitive	.491**	.695***	.489**	-	.650***	.644***
5. Affective	.269	.597***	.470**	.650***	-	.571***
6. Social	.307	.587***	.401*	.644***	.571***	-

Note. Values are Pearson's *r*. *p* < .05 (*), *p* < .01 (**), *p* < .001 (***)

Synthesis of main findings

Overall, participants reported a medium level of autonomous strategy use, with affective strategies scoring highest and memory strategies lowest. Correlational analysis indicates that cognitive, metacognitive, affective, and social strategies tend to co-occur, while memory strategies operate more independently of higher-order regulation. This pattern underscores the fragmented nature of learners' strategic repertoires and points to the importance of fostering integrative approaches that bridge basic retention with more advanced self-regulatory practices.

DISCUSSION

The present study investigated the autonomous learning strategies of undergraduate English learners in a Mexican public university, revealing a pattern of moderate strategy use overall, with affective and social dimensions particularly prominent. These findings are consistent with recent empirical work reporting that students often display only intermediate levels of autonomy, reflecting both contextual constraints and the evolving nature of self-regulated learning in higher education (Guo & Lee, 2023).

While affective strategies obtained the highest mean score in this study, research in other contexts has typically identified metacognitive strategies as the most frequently employed (Oxford, 2017; Pawlak & Oxford, 2018). This divergence may be attributable to contextual factors. In environments where English represents both an academic requirement and a source of apprehension, strategies related to motivation, confidence, and anxiety management appear more salient. Supporting this interpretation, Gaeta, Gaeta, and Rodríguez (2021) found that Mexican university students relied heavily on emotional coping strategies and positive affect when managing learning under conditions of stress, underscoring the central role of affective dimensions in sustaining self-regulated learning.

The correlational analysis in this study revealed strong interconnections among cognitive, metacognitive, affective, and social strategies, confirming the theoretical assumption that learning strategies are interrelated rather than isolated mechanisms (Oxford, 2017). These results align with recent research showing that metacognitive regulation is most effective when integrated with motivational and social factors. For instance, a study on metacognitive strategies and willingness to communicate found that learners with higher self-regulatory skills were more likely to engage in collaborative and communicative practices, mediated by their affective and motivational profiles (Luo & Yang, 2023). Similarly, Panadero (2022) emphasized that processes designed to foster autonomous learning are strengthened when emotional and social capacities are scaffolded alongside cognitive regulation.

By contrast, the weaker correlations involving memory strategies suggest that these techniques may not be well integrated into higher-order planning and monitoring. This pattern resonates with prior findings indicating that rote memorization is often employed mechanically and does not necessarily translate into enhanced autonomy unless explicitly connected to metacognitive frameworks (Pawlak & Oxford, 2018). In line with this observation, recent studies in English as a Foreign Language (EFL) contexts have also reported declining reliance on memory strategies, with learners increasingly adopting more communicative and reflective approaches (Uztosun, 2020).

Taken together, these results both confirm and extend previous knowledge on autonomous learning strategies. They confirm that Mexican university students tend to engage with strategies at moderate levels and that the interplay among cognitive, metacognitive, affective, and social strategies forms a coherent, integrative pattern. At the same time, they extend current research by highlighting the unusual prominence of affective and social strategies in this context, suggesting that pedagogical interventions should not only strengthen students' planning and monitoring skills but also deliberately foster emotional resilience and peer collaboration.

CONCLUSIONS

The present study examined the autonomous learning strategies of undergraduate students enrolled in a Mexican public university, with a specific focus on the dimensions of the Strategy Inventory for Language Learning (SILL). The findings revealed that students generally operate at a medium level of autonomy, confirming the central objective of the research: to identify and analyze the degree and nature of strategy use in this population.

The first major conclusion is that the predominant reliance on affective and social strategies underscores the salience of motivational, emotional, and interpersonal resources in supporting autonomous English learning within this context. While international studies frequently report metacognitive strategies as the most widely used (Oxford, 2017; Pawlak & Oxford, 2018), the prominence of affective strategies in this study highlights a context-specific phenomenon where students prioritize the regulation of anxiety, confidence, and peer interaction. This represents both a scientific contribution—by extending current

knowledge on how cultural and institutional factors shape strategy selection—and a practical implication, suggesting that pedagogical designs should integrate structured opportunities to develop emotional resilience and collaborative practices.

A second conclusion concerns the observed interrelationships among strategy dimensions. Strong correlations between cognitive, metacognitive, affective, and social strategies confirm that autonomy emerges not from isolated mechanisms but from a dynamic interplay of self-regulatory, motivational, and collaborative processes (Luo & Yang, 2023). This empirical evidence adds methodological value by validating the multidimensionality proposed in the original SILL framework and offering a robust basis for future measurement models in similar higher-education contexts.

Third, the relatively weak associations involving memory strategies suggest that rote learning practices are not effectively integrated into higher-order regulation. This finding aligns with recent scholarship emphasizing the decline of mechanical memorization in favor of communicative and reflective approaches (Uztosun, 2020). From a pedagogical standpoint, this highlights the need for instructional interventions that deliberately connect mnemonic techniques with planning, monitoring, and reflective practices, thereby maximizing their potential contribution to long-term autonomy.

In terms of impact, this study contributes at multiple levels. Scientifically, it documents a distinctive pattern of strategy use among Mexican university students, adding to the growing body of literature on learner autonomy in non-Western contexts. Methodologically, it confirms the utility of the SILL as a diagnostic tool, while also suggesting potential refinements in its application to diverse educational populations. Practically, the results point to the necessity of designing curricula and interventions that move beyond purely cognitive scaffolding, to also cultivate affective regulation and peer-based strategies as integral components of autonomous learning.

Finally, the study opens several avenues for future research. Comparative analyses across regions and academic programs could clarify whether the prominence of affective strategies is a local phenomenon or part of broader trends in Latin American higher education. Longitudinal designs would help trace how strategy use evolves over time and under different learning conditions, such as blended or fully online environments. Moreover, mixed-method approaches integrating qualitative perspectives could illuminate how students subjectively perceive the value of different strategies in their daily learning practices.

The objectives of the study were achieved: the research identified not only the overall level of autonomous learning strategy use but also the specific dimensions most employed, their interrelations, and their contextual significance. By highlighting the central role of affective and social strategies, the study offers an evidence-based contribution to both theory and practice, while providing a foundation for future research and pedagogical innovation in the field of autonomous English learning.

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