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ARTICLE

Reconsidering Strategy Instruction for Gen Z High School Learners: Psychological and Mental Well-Being in Mind

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ABSTRACT

This quantitative correlational study provides a comprehensive investigation into the utilization of strategies by high school students in learning English as a Foreign Language (EFL). It examines potential differences based on proficiency levels and gender. A sample of 78 students (39 females, 39 males) participated, and data was collected through a comprehensive strategy inventory. The findings revealed that high-proficiency learners exhibited a wider range of strategies, with compensation and metacognitive strategies being the most prominent. Medium-proficiency learners demonstrated moderate strategy use, emphasizing balance and metacognitive strategies. Conversely, low-proficiency learners engaged in strategies to a lesser extent, leaning towards social strategies. Gender, however, did not significantly influence overall strategy use across proficiency levels. Affective strategies were the least employed strategy type among all proficiency groups. Based on the findings, it is suggested that the creation of EFL resources with strategy instruction in mind is essential. EFL teachers should prioritize affective strategies to contribute to the learners' psychological and mental well-being when teaching Gen Z high school learners. Strategy instruction, especially affective strategies, empowers students to understand, apply, and adapt strategies to effectively deal with psychological and emotional challenges they face during their language learning process. A more flexible approach, in which EFL teachers adjust strategies to align with the specific needs of both high and low-proficiency students, is recommended. Coursebook authors are recommended to integrate strategy use, particularly tailored to the needs of learners.

Keywords: Language Strategies; Learning Strategies; Proficiency Levels; High School; Well-Being

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1. Introduction

English, as a widely spoken lingua franca across the globe, has garnered significant attention from policy-makers, institutions, and educators, leading to a strong emphasis on English language teaching (ELT)[1]. The ultimate objective of language learning endeavors remains to achieve heightened English proficiency[1]. A notable paradigm shift from teacher-centered pedagogies to learner-centered approaches has recently encouraged educators to foster learner autonomy[2]. Teachers' beliefs and readiness to support autonomy are central to effective LLS instruction. In secondary schools, many teachers believe in learner autonomy but still struggle to fully implement it due to structural or pedagogical constraints[3] and a lack of ICT support[4]. Thus, language learning strategies (LLSs) have been pivotal in ELT research, as they are the strategies that are used by language learners for a variety of purposes.

Strategy instruction has shown positive effects on learners' affective states by enhancing their self-efficacy and motivation and decreasing their anxiety[5] and leading a sense of well-being. On the flip side of that, Gen Z learners are usually said to be mentally and psychologically fragile. High school learners benefit from strategy instruction that builds emotional resilience. Recent work shows that affective strategies, such as anxiety control and motivational self-talk, significantly predict engagement and performance among adolescents in bilingual and EFL contexts[6]. Providing these learners with the skills that are necessary to navigate psychological challenges within strategy instruction (especially affective strategies) can serve as a healthy foundation upon which they can build their language proficiency.

Several studies provide evidence that affective strategies are not only theoretically relevant, but can be practically implemented, with beneficial associations in EFL settings. For instance, Mostafavi and Vahdany found that explicit instruction in strategies such as relaxation exercises, visualization, positive self-talk, risk-taking, and emotion monitoring was associated with lower speaking anxiety and improved oral proficiency among Iranian high school learners[7]. Similarly, Zhang et al. showed that integrating self-regulation techniques that include affective elements (e.g., motivating self-speech, emotional goal setting) correlated with higher self-efficacy, increased willingness to communicate, and stronger motivation[8]. Quvanch also observed that coping strategies, such as engaging with authentic English, seeking constructive feedback, and practicing outside the classroom helped learners regulate their emotions and reduce speaking anxiety[9]. In online EFL contexts, Liu reported that supportive practices such as delaying error correction and providing positive reinforcement were linked with reduced anxiety[10]. Together, these studies highlight that affective strategies are consistently associated with emotional resilience and engagement in language learning.

Recognized for their potential to facilitate language learning[11,12] by promoting self-regulated learning[13] and driving remarkable success in the target language[14], LLSs have become a subject of extensive investigation. Empirical evidence, as demonstrated by studies[15–23], establishes that proficient learners tend to employ a greater array of LLSs, indicating that LLSs play a key role in learner performance. Recent findings confirm that higher learner autonomy significantly correlates with broader use of language learning strategies, which in turn positively impacts language proficiency among high school students[24]. This reinforces the idea that autonomy and strategic competence are interdependent.

Nevertheless, English language teachers usually find themselves in a situation where they need to make a tough decision to pick the most practical way to plan the lessons and deliver the instruction. Would this not hinder the careful implementation of strategy instruction, which requires careful planning as there are tens of different strategies to teach? In this case, a practical solution could be planning strategy instruction based on the priorities. In other words, a need-specific approach could be of benefit such as delivering metacognitive strategies to a group of learners who make low use of them. On the flip side of that, it is also not always practical to assess the rate to which a group of learners employs specific strategies before delivering strategy instruction. While a specific group of learners, who share at least a common background (such as proficiency level, culture, or age), employ higher rates of metacognitive strategies, others with different backgrounds may employ them the less. Thus, investigating LLSs offers valuable insights to educators to equip them with the knowledge that they need to have learners succeed.

2. Literature Review

2.1. Psychological and Mental Well-Being in Language Learning

With the increased attention to positive psychology within ELT, novel approaches for investigation of psychological and mental well-being of English language learners (ELL) have contributed to a better understanding of the roles they play in English language learning [25–29]. Rather than attributing the ELLs' performance to solely well-being, positive psychology aims to provide insights into what drives success and failure within a psychological and mental viewpoint [26].

In the context of positive psychology, well-being is a multidimensional construct that refers to individuals' perceptions of their own quality of life and mental state. It encompasses both hedonic aspects (such as positive emotions, joy, and satisfaction) and eudaimonic aspects (such as meaning, resilience, accomplishment, and vitality) [26,30]. In educational research, psychological and mental well-being is often reflected in indicators such as life satisfaction, emotional balance, engagement, and healthy social relationships [31,32]. In EFL contexts, learners who report higher levels of well-being also tend to show stronger engagement, greater motivation, and more constructive interactions in the classroom [33–36]. Importantly, these findings highlight associations rather than direct causal effects, suggesting that learners' affective states and language learning outcomes are reciprocally and dynamically related. Psychological resilience (buoyancy) and boredom regulation have been found to mediate the relationship between autonomous motivation and EFL engagement in high school learners [37]. These findings underscore the importance of emotional factors in sustaining student engagement and language success.

If ELLs perform better when their psychological and mental needs are covered [38], what are the factors, then, contributing to increased well-being among ELLs? Some factors include life satisfaction [39], good health [40], rapport with teachers [29], and sense of Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment (the PERMA) [32]. Therefore, language teachers should not only shape their pedagogical approach by considering what is explicitly observed such as achievement test results or the rate at which learners do their homeworks, but also they should consider what is going on in learners' minds because learning and teaching a new language is a complex and dynamic process [41–43].

2.2. Definition of LLS

To understand the role of Language Learning Strategies (LLS) in language instruction, it is essential to first establish a clear definition of LLS. Despite numerous attempts, various scholars have defined LLSs [44–56]. For instance, one of the earliest definitions proposed LLS as "special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information" [54]. More recently, Griffiths defines LLS as "activities consciously chosen by learners to regulate their own language learning" [57]. The existence of diverse LLSs definitions is invaluable, as it fosters discussions that lead to more profound research on the topic. Despite the absence of a universally agreed-upon definition, we endorse Oxford's definition, which is based on a comprehensive content analysis of a range of definitions available in the literature:

> complex, dynamic thoughts and actions, selected and used by learners with some degree of consciousness in specific contexts in order to regulate multiple aspects of themselves (such as cognitive, emotional, and social) for (a) accomplishing language tasks; (b) improving language performance or use; and/or (c) enhancing long-term proficiency. [58]

2.3. Classifications of LLSs

In the pursuit of teaching LLSs to learners, scholars have undertaken several studies to categorize LLSs [59,60], aiming to provide a meaningful framework. Among the available classifications, Oxford's framework stands out as one of the most comprehensive and detailed in the literature, making it the preferred choice for this study. These refined frameworks offer practical tools for instruction tailored to learners' needs. Oxford's categorization separates LLSs into two primary groups: direct and indirect strategies [60]. Direct strategies encompass memory, compensation, and cognitive strategies. Memory strategies assist learners in transferring newly acquired language input into their long-term memory for future retrieval during communication, while cognitive strategies aid learners in constructing and revising inner mental structures to better comprehend and convey messages,

such as taking notes. Lastly, compensation strategies prove invaluable for learners facing challenges in expressing themselves in the target language due to limited knowledge or learning gaps, such as using gestures or mimes to compensate for speech impediments and effectively communicate their message [60]. By employing Oxford's well-defined framework, this study aims to gain deeper insights into the utilization of direct LLSs, thereby contributing to a more nuanced understanding of effective language learning approaches. By employing Oxford's well-defined framework, the present study aims to gain deeper insights into the utilization of direct LLSs, thereby contributing to a more nuanced understanding of effective language learning approaches. In parallel with Oxford's model, more recent research has highlighted the importance of integrating cognitive, motivational, affective, and social dimensions in strategy use. For example, Sun developed and validated a scale to measure self-regulated learning strategies for EFL speaking, demonstrating the multidimensional nature of effective language strategy instruction [61].

2.4. Factors Influencing LLS Use

AlSohbani emphasizes learner diversity arising from factors such as learning styles, motivations, backgrounds, ages, and attitudes, which results in the adoption of diverse LLSs to suit individual characteristics and specific tasks [12]. This concept is consistent with Spolsky's extensive list of language learning factors, as classified by Kumaravadivelu into "learner internal" and "learner external" categories [62,63]. LLSs, positioned as a tactical factor, play a role in strategy variations not only between students of different proficiency levels but also among individuals within the same level.

The existing literature primarily focuses on strategy use among middle school and university students [1,22,64–71]. Therefore, a gap in the literature exists due to the lack of research on the use of LLSs among high school learners, especially regarding Gen Z learners with the changing landscapes in EFL education. Understanding the distinct LLSs employed by high school students in the EFL setting is crucial, as this phase represents a pivotal stage in foreign language education, and the context-specific factors are also important when analyzing strategy use in secondary education. For instance, recent studies involving high school learners in Serbia and China demonstrate that strategy use is influenced not only by proficiency and gender, but also by school type, curriculum, and the perceived utility of English learning [72,73].

Adolescence is a significant period for language teaching and learning, where learners undergo significant cognitive, social, and emotional development. During high school years, students are often exposed to more complex language tasks and academic content, necessitating a deeper understanding of effective learning strategies to cope with the increasing language demands, as strategic competence, which is intimately linked to communicative competence [74], plays a pivotal role in students' ability to attain language proficiency and communicate effectively. Moreover, high school learners' language learning experiences can shape their attitudes and motivations toward language learning in the long term. Effective use of LLSs during this critical phase can foster a sense of language autonomy and self-regulation, enabling students to take ownership of their learning and become lifelong language learners. On the other hand, neglecting the importance of LLSs during high school years may lead to missed opportunities for language learning and hinder students' language proficiency growth. By addressing this pivotal phase in language education, we can better support students in their journey to becoming proficient and confident English language users, setting the foundation for success in both academic and real-life communication.

Another research gap lies in the limited investigation of the relationship between gender and LLS use among Turkish learners, despite various studies in other countries [13,75–81]. While previous studies have acknowledged gender as a potential influencing factor in LLS adoption, the existing literature primarily comprises early works suggesting that females tend to employ learning strategies more frequently than males [1,82]. However, recent evidence from Turkey and other EFL contexts shows that the differences may not be as pronounced or may be strategy-specific [83,84]. These findings call for a more nuanced understanding of gender as a contextual, rather than universal, factor.

However, these studies lack comprehensive exploration and analysis of the specific gender-related differences in LLS utilization among Turkish learners.

To address these gaps, a more rigorous and systematic investigation is needed to understand the extent to which proficiency and gender impact the choice, frequency, and effectiveness of LLSs among Turkish language learners. The present study is undertaken to make a valuable contribution

to the existing literature in this domain. In pursuit of this aim, the following research questions are formulated:

1. Which LLSs do students with low, medium, and high-proficiency levels predominantly employ in their EFL learning at a private Turkish high school?
2. Are there notable variations in the utilization of LLSs among Turkish high school students with low, medium, and high-proficiency levels?
3. Is there a significant difference in the application of LLSs between genders among Turkish high school students with low, medium, and high-proficiency levels in EFL learning?

3. Materials and Methods

3.1. Participants

The study sample was selected using a well-designed stratified random selection procedure to ensure representation and validity. It consisted of 78 high school students (39 males and 39 females), aged between 14 and 17, enrolled in a private high school in Türkiye. At the start of the educational year, the school conducted a thorough placement examination to gauge students' proficiency levels in reading, writing, speaking, listening, grammar, and vocabulary. Based on the test results, the participants were divided into three distinct proficiency groups: high (upper-intermediate to advanced, B2), medium (intermediate to intermediate plus, B1), and low proficiency (elementary to pre-intermediate, A2). Each proficiency group was carefully balanced to maintain an equal number of male and female participants. This approach allowed for robust comparisons within each group and ensured gender balance to mitigate potential confounding effects. The clear delineation of proficiency levels and the meticulous participant selection procedure enhance the study's validity and facilitate meaningful analysis of language learning strategies among Turkish high school students.

3.2. Setting

The research was conducted at a private high school in Türkiye, where the English language course syllabus significantly differs from that of public schools. The private school follows a specially designed curriculum developed by the Foreign Language Teaching Directorate of the private institution. In contrast, public schools typically offer four hours of English language instruction in ninth grade and two hours in 10th, 11th, and 12th grades, using a domestically developed coursebook. At the private school under study, English language teaching is substantially intensified, with approximately ten hours of instruction weekly in ninth and 10th grades and five hours in 11th and 12th grades. Moreover, the private school employs an imported coursebook, specifically the "English File Series" published by Oxford University Press. These distinctions in the English language curricula between the private and public school systems in Turkey can potentially have a substantial impact language learning strategies. The intensified English language instruction and the use of an imported coursebook in the private school may lead to more exposure to authentic English materials and a greater focus on communicative skills. This could encourage students to adopt more LLSs. In contrast, the limited exposure and domestically developed coursebook in public schools may result in a more traditional, exam-focused approach to language learning, potentially impacting the strategies students use, such as memorization.

3.3. Research Design

The present study employed a descriptive quantitative correlational research design to thoroughly investigate the utilization of language learning strategies among Turkish high school students. Descriptive research seeks to provide a comprehensive description of phenomena, answering "what" questions[85]. In our case, we used this design to gain a detailed understanding of the LLSs use of participants at different proficiency levels and genders. Additionally, we used the correlational design to assess relationships between variables (proficiency level, gender) in our research questions[86]. By employing this research design, we were able to provide a data-driven, evidence-based understanding of how language learning strategies were utilized among Turkish high school students. We deeply explored LLSs by considering variations in proficiency levels and gender and identified any statistically significant relationships. By using this design, we were able to answer the research questions and make substantial contribution to the field of language education by shedding light on the intricate dynamics of LLSs in the high school context.

3.4. Data Collection Tool

To assess the language strategy use of the participants, the "Strategy Inventory for Language Learning" (SILL), developed by Oxford and translated into Turkish by Cesur and Fer was employed[60,87]. SILL is a reliable five-point Likert-type scale with six dimensions and 50 items, specifically designed for EFL learners. The dimensions comprise memory, cognitive, and compensation as direct strategies, and metacognitive, affective, and social strategies as indirect strategies. The participants were asked to rate their agreement (from "never or almost never true" to "always or almost always true") with the statements. To assess internal consistency in the present dataset, reliability coefficients were computed for the scale. Cronbach's α (α = 0.92) and McDonald's ω (ω = 0.92) were both found to be excellent, indicating high internal consistency of the instrument in this sample. These results are in line with earlier validation findings by Cesur and Fer, who reported α = 0.92 for the Turkish SILL[87]. Regarding the validity of the SILL, a factor analysis confirmed a construct consisting of 47 items under six dimensions, supporting the scale's construct validity. Additionally, the test-retest method for external validity indicated a value ranging between "0.67" and "0.87"[87], further supporting the instrument's validity.

Ethical considerations were diligently addressed, with necessary permissions obtianed from the school authorities, and obtaining informed consent from parents and assent from participants. The study was ethically approved by Ondokuz Mayıs University Ethics Committee for Social and Human Sciences Research (*Decision no.* 2021-949).

3.5. Data Analysis

The data collected from the participants were quantitatively analyzed using SPSS version 26 for Windows. Descriptive statistics were initially employed to determine the learners' preferences in using language learning strategies. The strategy use range was categorized into three intervals based on the key introduced by Oxford, where mean scores of 1 to 2.4 were labeled as low usage, 2.5 to 3.4 as medium usage, and 3.5 to 5.0 as high usage[60].

The normality of distribution was assessed using the Shapiro-Wilk Test to determine the appropriateness of parametric or non-parametric analysis. As the data were found to be normally distributed for all categories, the One-Way ANOVA test and multiple comparison post hoc tests were conducted to compare the three proficiency groups. The Tamhane post hoc test was used for the affective strategy category, while the Tukey HSD post hoc test was applied for the other categories, considering the results of homogeneity of variances.

Finally, an independent samples T-test was utilized to compare the differences between genders within the low, medium, and high-proficiency learner groups, respectively. The sample size and the chosen significance level for the statistical tests were 78 participants and α = 0.05, respectively, ensuring adequate statistical power and significance in the analysis. With the methodological underpinning set in place, the ensuing section is dedicated to a comprehensive exposition of the outcomes.

4. Results

4.1. LLS Use of the Learners

The first research question aimed to investigate the LLS preferences of low, medium, and high-proficiency students studying EFL at a private Turkish high school. A descriptive statistical analysis was conducted to address this question.

Figure 1 presents a comprehensive summary of the LLS preferences of students across different proficiency levels. The table provides a breakdown of the preferred strategies for each group and their corresponding LLS use means.

The LLS preferences of low, medium, and high-proficiency students were analyzed, and the findings are presented in **Figure 1**. The results in **Figure 1** illustrate that among all proficiency levels, affective strategies were the least employed (M = 2.34), which may provide valuable insights regarding Gen Z learners' strategy use. The findings are summarized as follows:

4.2. Low Proficiency Level

Among low proficiency learners, social strategies were the most frequently used (M = 3.08), followed by compensation strategies (M = 2.68) at a medium-use rate. Cognitive (M = 2.49) and metacognitive (M = 2.47) strategies had low-use rates, while affective strategies were employed the least (M = 1.91). The overall mean for LLS use in the low proficiency group indicated a low-use rate (M = 2.45).

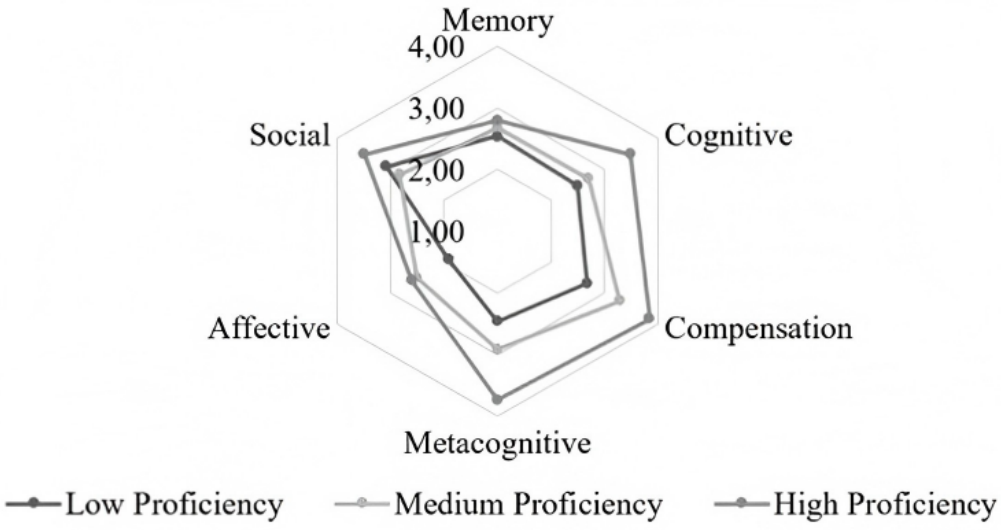

Figure 1. Strategy Use of Different Proficiency Level Learners.

4.3. Medium Proficiency Level

Medium proficiency learners displayed balanced use of different strategies, with compensation strategies being used the most (M = 3.28) and affective strategies being employed the least (M = 2.51). Other strategies were used at medium levels: memory (M = 2.86), cognitive (M = 2.70), metacognitive (M = 2.92), and social (M = 2.83).

4.4. High Proficiency Level

High-proficiency students utilized compensation strategies the most (M = 3.85) with high use rate, while affective strategies were used the least (M = 2.60) at a medium use rate. Metacognitive strategies were employed at a high rate (M = 3.73), and social and cognitive strategies were used similarly (M = 3.48 and M = 3.48, respectively). Memory strategies had a medium-use rate (M = 2.80).

High-proficiency learners consistently outperformed medium and low proficiency learners across all categories of LLS use. Additionally, medium proficiency learners generally performed better than low proficiency learners, except for the use of social strategies.

To determine the statistical significance of these differences among low, medium, and high-proficiency groups, further analyses were conducted. Statistical measures, such as standard deviations, were considered to provide a more comprehensive understanding of the data.

4.5. Difference among Proficiency Levels

To investigate the significant differences in language learning strategy (LLS) use among low, medium, and high proficiency level Turkish high school students, quantitative analyses were conducted using SPSS. The normality of data distribution was confirmed using the Shapiro-Wilk test, which indicated normal distribution for all strategy categories ($p > 0.05$) (**Table 1**).

Table 1. Shapiro-Wilk test of normality for strategy categories data.

Category	Statistic	df	*p*
Memory	0.975	78	0.133*
Cognitive	0.984	78	0.412*
Compensate	0.976	78	0.147*
Metacognitive	0.977	78	0.181*
Affective	0.975	78	0.126*
Social	0.989	78	0.722*
Total	0.980	78	0.253*

*$p > 0.05$.

The one-way ANOVA analysis (**Table 2**) revealed significant differences among proficiency groups for all strategy categories, except for memory ($p > 0.05$).

Multiple comparison tests were then performed to identify specific differences between proficiency levels (**Table 3**).

Table 2. One-way ANOVA results according to learners' proficiency.

		Sum of Squares	df	Mean Square	F	Sig.
Memory	Between Groups	0.885	2	0.443	1.411	0.250
	Within Groups	23.539	75	0.314		
	Total	24.424	77			
Cognitive	Between Groups	14.158	2	7.079	23.071	<0.001
	Within Groups	23.013	75	0.307		
	Total	37.171	77			
Compensation	Between Groups	17.697	2	8.849	27.883	<0.001
	Within Groups	23.801	75	0.317		
	Total	41.499	77			
Metacognitive	Between Groups	20.954	2	10.477	18.603	<0.001
	Within Groups	42.240	75	0.563		
	Total	63.194	77			
Affective	Between Groups	7.314	2	3.657	9.438	<0.001
	Within Groups	29.062	75	0.387		
	Total	36.376	77			
Social	Between Groups	12.643	2	6.322	13.064	<0.001
	Within Groups	36.292	75	0.484		
	Total	48.935	77			
Total	Between Groups	10.434	2	5.217	28.157	<0.001
	Within Groups	13.896	75	0.185		
	Total	24.330	77			

Table 3. Multiple Comparisons Results According to Learners' Proficiency.

Type	Category	Proficiency	*N*	*M*	Use
Direct	Memory	Low	26	2.54	M
		Medium	26	2.68	M
		High	26	2.80	M
	Cognitive	Low	26	2.49	L
		Medium	26	2.70	M
		High	26	3.48	M
	Compensation	Low	26	2.68	M
		Medium	26	3.28	M
		High	26	3.85	H
	Metacognitive	Low	26	2.47	L
		Medium	26	2.92	M
		High	26	3.73	H
Indirect	Affective	Low	26	1.91	L
		Medium	26	2.51	M
		High	26	2.60	M
	Social	Low	26	3.08	M
		Medium	26	2.83	M
		High	26	3.48	M
Overall		Low	26	2.45	L
		Medium	26	2.80	M
		High	26	3.43	M
Total			78	2.86	M

High-proficiency learners demonstrated more use of cognitive, compensation, metacognitive, and social strategies compared to both low and medium proficiency learners ($p < 0.05$). However, no significant difference was found in the use of affective strategies between medium and high-proficiency learners ($p > 0.05$). Medium proficiency learners exhibited significantly higher use of compensation and affective strategies compared to low proficiency learners ($p < 0.05$). Although their mean scores were higher than those of low proficiency learners in other strategy categories, no statistically significant differences were observed ($p > 0.05$). Low proficiency level learners showed significantly lower use of strategies in all categories, except for memory, compared to high-proficiencylearners ($p < 0.05$). Additionally, the low proficiency group did not demonstrate significantly better strategy use than the medium and high-proficiency groups ($p > 0.05$).

Overall, high-proficiency learners displayed significantly higher overall strategy use compared to both medium and low proficiency groups ($p < 0.05$). Medium proficiency learners had significantly higher overall strategy use mean scores than low proficiency learners ($p < 0.05$).

In summary, the results indicate that high proficiency level learners employ a wider range of strategies and use them more effectively than their peers with lower proficiency levels. Medium proficiency learners also show a notable use of strategies, outperforming low proficiency learners in certain categories. These findings shed light on the importance of fostering LLS use among language learners to enhance language proficiency and communication abilities.

4.6. Difference between Genders

To investigate whether there were significant differences in the utilization of LLSs between male and female students across different proficiency levels, independent samples T-tests were conducted. **Tables 4–7** display the results for low, medium, and high-proficiency-level learners, respectively.

For low proficiency level students (**Table 4**), no significant difference was found between females and males in any strategy category or overall strategy use ($p > 0.05$).

Table 4. T-test results for Low Proficiency Level Students.

Strategy Category	**Male**		**Female**			**Sig**
	M	***S.D***	***M***	***S.D***	***t***	**(2-tailed)**
Memory	2.78	0.554	3.00	0.501	1.071	0.295
Cognitive	2.78	0.534	2.95	0.394	0.924	0.365
Compensation	2.98	0.705	3.01	0.888	0.082	0.936
Metacognitive	2.94	0.824	3.05	0.662	0.379	0.708
Affective	2.11	0.685	2.08	0.444	0.113	0.911
Social	3.02	0.460	2.97	0.588	0.247	0.807
Total	2.77	0.504	2.84	0.399	0.422	0.677

In the case of medium proficiency level students (**Table 5**), females demonstrated significantly higher use of cognitive ($p < 0.05$) and metacognitive strategies ($p < 0.05$) compared to their male counterparts. However, there were no significant gender differences in other strategy categories or overall strategy use.

Table 5. T-test results for medium proficiency level students.

Strategy Category	**Male**		**Female**			**Sig**
	M	***S.D***	***M***	***S.D***	***t***	**(2-tailed)**
Memory	2.35	0.522	2.65	0.682	1.290	0.209
Cognitive	2.52	0.484	3.01	0.690	3.264	0.003*
Compensation	3.16	0.638	3.35	0.611	0.784	0.441
Metacognitive	2.35	0.618	3.31	1.135	2.669	0.013*
Affective	2.39	0.658	2.69	0.533	0.546	0.590
Social	2.50	0.751	3.05	0.856	1.745	0.94
Total	2.50	0.394	2.94	0.562	2.314	0.30

Note: * $p < 0.05$, indicating a statistically significant difference.

For high proficiency level students (**Table 6**), no significant difference was observed across genders in any strategy category or overall strategy use ($p > 0.05$).

Beyond statistical significance, effect sizes were calculated to assess the magnitude of differences in strategy use. For one-way ANOVAs, η^2 values were derived from sums of squares, and for independent t-tests, Hedges' g was used. The results indicated large proficiency effects for most categories and large gender effects in the medium-proficiency group (**Table 7**).

Table 6. T-test results for high proficiency level students.

Strategy Category	Male		Female			Sig
	M	*S.D*	*M*	*S.D*	*t*	(2-tailed)
Memory	2.45	0.539	2.72	0.427	1.348	0.190
Cognitive	3.00	0.579	3.40	0.851	1.404	0.173
Compensation	3.50	0.677	3.64	0.703	0.521	0.607
Metacognitive	3.22	0.865	3.35	0.991	0.375	0.711
Affective	2.38	0.859	2.78	0.791	1.227	0.232
Social	2.93	0.901	3.17	1.032	0.641	0.528
Total	2.91	0.578	3.18	0.662	1.089	0.287

Table 7. Effect Sizes for Strategy Use by Proficiency and Gender.

Strategy Category	η^2	Magnitude	Gender Effect (Hedges' g)	Group
Memory	0.036	Small	—	—
Cognitive	0.381	Large	1.24	Medium (F>M)
Compensation	0.426	Large	—	—
Metacognitive	0.332	Large	1.01	Medium (F>M)
Affective	0.201	Large	—	—
Social	0.258	Large	—	—
Total LLS	0.429	Large	—	—

Note: η^2 = proportion of variance explained; g = Hedges' g. "—" indicates nonsignificant effect.

Overall, the findings indicate that gender did not play a significant role in determining the use of LLS among low and high-proficiency-level learners. However, for medium proficiency level learners, females exhibited significantly higher use of cognitive and metacognitive strategies than males. No significant gender differences were observed in other strategy categories or overall strategy use for medium proficiency learners.

In conclusion, gender differences in LLS use were minimal, suggesting that both male and female students can effectively employ various strategies to support their language learning process across different proficiency levels.

5. Discussion

The present study examined the relationship between language learners' proficiency levels and their utilization of LLSs and exhibited substantial findings. The findings of this research align with and complement the existing body of literature, substantiating the positive correlation between strategy use and learners' achievements, as previously indicated by prominent scholars [17–19,21–23,66,88–91]. Nonetheless, it is noteworthy to acknowledge the contrasting findings reported by Ranjan et al., whose study on adult university students did not observe any significant relationship between proficiency and LLS use [69].

Within the context of strategy categories, the current study revealed intriguing disparities in strategy use among learners of varying proficiency levels. Notably, high-proficiency learners demonstrated a proclivity for employing LLSs across all categories, with the exception of memory strategies. Medium-proficiency learners, in comparison to their low-proficiency counterparts, exhibited higher usage rates of LLSs, with particular significance observed in the domains of compensation and affective strategies. Interestingly, memory strategies were utilized at a relatively similar moderate rate across all proficiency groups, which is reminiscent of the findings posited by Abdul-Ghafour and Alrefaee [21].

Addressing the matter of gender differences in LLS usage, the overall results indicated a lack of significant vari-

ance between genders across all proficiency levels, consistent with the studies of Dadour and Robbins, Griffiths, Yang, and Mutar[17,66,71,92]. However, upon closer scrutiny, gender distinctions emerged within the medium proficiency group. Specifically, female learners exhibited statistically higher usage of metacognitive and cognitive strategies compared to their male counterparts. This intriguing finding converges with research postulating that females might possess inherent advantages in language learning owing to their advanced oral and cognitive faculties, as supported by scientific articles, which establish female brains as "less lateralized," thereby enhancing language acquisition capabilities[88,93–95].

The insights gleaned from low proficiency learners were equally illuminating, as they reported employing social strategies most frequently, followed by compensation strategies. This stands in contrast to the observations made by Abdul-Ghafour and Alrefaee, where Yemeni low achievers manifested a higher prevalence of metacognitive strategies[21]. Additionally, low proficiency learners displayed intermittent usage of metacognitive and cognitive strategies, but their engagement in affective LLS, such as self-reward or self-encouragement, appears limited. Emphasizing the value of errors as indicative of learning progress, as advocated by Corder, could serve to dispel learners' apprehensions and promote a more conducive language learning environment[96].

Medium-proficiency learners were not without their challenges, as the study reveals their somewhat inconsistent implementation of metacognitive strategies, such as self-monitoring and self-evaluation, which, as established by Zimmerman, play pivotal roles in the enhancement of language learning[97]. However, a significant aspect that warrants attention was the notable inadequacy in planning sufficient time for extensive English study outside the classroom. As posited by the Hebbian learning theory, "neurons wire together if they fire together"[98], rendering extensive practice instrumental in the establishment of stronger neural connections. Encouraging learners to actively engage in diverse and extensive learning activities was, therefore, a pedagogical imperative to foster language proficiency.

Among the highest proficiency learners, a rich tapestry of LLS usage emerged, with compensation and metacognitive strategies occupying the foremost positions. These findings, in accordance with Oxford's research on advanced learners, underscored the heightened control that high achievers exercise over their learning process, actively setting and pursuing language skill development goals[60]. Their concerted efforts to seek out opportunities for enhancing their English abilities exemplified a proactive approach to language learning, ultimately contributing to their elevated proficiency levels.

The most striking finding of the present research was that regardless of their proficiency levels, affective strategies were the least employed LLSs among Gen Z high school EFL learners, which contradicted the earlier research on LLSs[78,81,99–101] but aligned more closely with the more recent studies[13,75–77,79,80,102]. This finding supports the notion that language learning is a complex-dynamic process, not static[41,42]. Due to changing educational landscapes and learner profiles, language teachers carefully prioritize the strategy types that they instruct learners in, under time constraints devoted to strategy instruction. For instance, Gen Z learners are differed from the previous generation in a way that they spend much time online[103], especially on online games and social media. This may have affected their well-being[104] due to lower social interactions within real life situations[105], and difficulties in finding meaning in their lives[106]. As affective strategies are ground in positive psychology, we may put forward that this may have caused a decline in affective strategies among Gen Z high school learners. However, these strategies are crucial for language learning, as they can boost learning.

In conclusion, the present study not only corroborated the well-established relationship between proficiency and LLS utilization but also provided valuable insights into the specific strategies adopted by learners at various proficiency levels. It accentuated the significance of gender in mediating strategy usage within the medium proficiency group, substantiating previous findings regarding the potential advantages of females in language learning. Furthermore, the observations of low proficiency learners elucidated the importance of addressing learners' fears and promoting the value of errors as part of the learning process. For medium-proficiency learners, nurturing metacognitive skills and encouraging extensive language practice outside the classroom were pivotal pedagogical considerations. Lastly, the study's high proficiency cohort exemplified the efficacy of compensation and metacognitive strategies in fostering language proficiency, underscoring the merits of proactive and goal-oriented learn-

ing approaches.

In the broader context of language education, these findings contributed to our understanding of the factors influencing language learning outcomes and offer valuable implications for instructional practices tailored to supporting learners in attaining higher levels of proficiency. The knowledge generated from this study served as a stepping stone for further exploration into the intricate interplay between proficiency, strategies, and pedagogy, ultimately enriching the field of language learning research.

5.1. Limitations

We acknowledge several limitations that shaped the scope and interpretation of our findings. One significant constraint was the relatively small sample size, consisting of 78 students from a single Turkish private high school. While we made efforts to ensure a balanced representation of genders and proficiency levels, caution must be exercised when generalizing the results to a broader population of Turkish EFL learners. Despite the comprehensive approach to data collection through a strategy inventory, which allowed us to explore various strategies, it is crucial to acknowledge the inherent subjectivity of self-reporting data. This method may have introduced biases, including recall bias or the tendency for participants to present themselves more favorably. Furthermore, the cross-sectional design of the study limited our ability to trace changes in language learning strategies over time. Nevertheless, we believe that our research provides valuable insights into the language learning practices of Turkish high school EFL students and lays the groundwork for future investigations in this context. Lastly, although the study provides robust within-sample evidence, external validity is constrained. The sample derives from a single Turkish private high school with intensified English instruction and imported materials, which differs sharply from public-school contexts where exposure is limited and coursebooks are domestically produced. Thus, results should be primarily generalized to similar private, high-exposure EFL settings rather than to all Turkish secondary schools. Future research should expand to multiple sites, test measurement invariance across groups, and employ longitudinal or experimental designs to strengthen external validity.

6. Conclusions

In this study, our primary objective was to investigate LLSs employed by EFL learners and to explore potential differences in LLS use based on learners' proficiency levels and genders. The findings of this study shed light on the intricate relationship between language strategies and the extent and nature of LLS utilization among EFL learners. Our analysis revealed distinct patterns of strategy use among learners of varying proficiency levels. High-proficiency learners demonstrated a diverse range of strategies, with compensation and metacognitive strategies being the most prominently employed. Similarly, medium-proficiency learners displayed a moderate level of strategy usage, also favoring compensation and metacognitive strategies. In contrast, low-proficiency learners exhibited a lower rate of strategy usage, with a notable emphasis on social strategies. These findings emphasize the pivotal role of metacognitive awareness and strategic compensation in enhancing language learning outcomes for higher-proficiency learners. Our investigation also sought to explore potential gender differences in LLS usage. Interestingly, the extent of LLS use did not significantly differ between genders, suggesting that gender may not be a significant factor in shaping overall strategy usage patterns among EFL learners.

6.1. Suggestions and Practical Implications

First and foremost, it is evident that all learners have shared a common ground that they utilized the affective strategies the least. Thus, EFL teachers should prioritize affective strategies while teaching Gen Z learners, as it has been the weakest side of their strategy use. In practical classroom terms, affective strategies can be integrated without requiring extra teaching hours. Teachers might guide learners through a short relaxation or breathing exercises before speaking tasks to reduce anxiety, echoing practices reported in affective-strategy training studies [7]. Learners can be encouraged to keep "confidence journals" where they record positive self-talk or reflect on emotional progress; these practices has been linked to higher self-efficacy and motivation [8]. Low-stakes peer rehearsals before whole-class presentations, collaborative encouragement cards, and structured feedback sessions reflect affective-oriented practices that have been

associated with reduced speaking anxiety[9,10]. Such techniques are particularly suited to Gen Z learners, who often benefit from explicit emotional scaffolding alongside cognitive and metacognitive instruction. The strategy instruction of affective strategies can contribute to the learner well-being. EFL teachers can help ELLs by having them acquire the skills they need to be psychologically and mentally well.

It is also evident that strategy-use patterns vary based on learners' proficiency levels. The current study's findings have shed light on specific LLS usage patterns, enabling EFL teachers to capitalize on the strategy preferences of high-proficiency learners to enhance the learning process for their low-proficiency counterparts. We recommend that EFL teachers actively foster the utilization of metacognitive and cognitive strategies when instructing learners with lower proficiency levels. Secondly, the importance of strategy use in language learning cannot be overlooked, prompting EFL teachers to encourage the adoption of strategies, either explicitly or implicitly, to bolster learners' achievements in EFL learning.

The existing literature supports the notion that strategy instruction can significantly enhance students' comprehension rates[107]. Notably, the participants in our study had not received any explicit strategy instruction prior to their involvement. As such, a future experimental study investigating the impact of LLS explicit strategy instruction on learners' achievement could prove highly advantageous. Lastly, it is essential to acknowledge the limitations of our study, which was confined to the private Turkish high school context. To expand the breadth of understanding, we propose conducting further research in public Turkish high school contexts or comparing strategy usage across different educational settings. Additionally, exploring the potential relationship between learners' attitudes and their strategy use constitutes a promising avenue for future inquiry.

There is a dearth of coursebooks that focus on various language learning strategies, despite the evident importance of strategies in relation to proficiency levels. Based on our findings, we recommend coursebook authors to incorporate strategies into EFL coursebooks. Encouraging self-directed learning of strategies may lead learners to achieve greater proficiency levels. Learners' autonomy over their own learning process is crucial. Planning, organizing, and dedicating time to English practice outside the classroom are essential for achieving high proficiency in the target language. On the other hand, low proficiency learners tend to struggle with peer cooperation. EFL teachers are advised to facilitate group or pair communication opportunities to address this issue.

Furthermore, low proficiency learners rely heavily on gestures or equivalents from their mother tongue to overcome communication limitations. Rather than discouraging the use of the mother tongue, teachers are encouraged to view this as a strength and allow students to benefit from this strategy. The emerging field of translanguaging supports this approach. Additionally, EFL teachers should guide learners in developing effective guessing skills by providing relevant instructions. For instance, pre-reading activities such as analyzing titles and images can enhance comprehension. Lastly, addressing the affective aspects of learning is essential, as low proficiency learners often exhibit anxiety in speaking. Teachers are urged to create a supportive classroom environment and apply techniques to reduce anxiety during speaking tasks.

In conclusion, these suggestions and implications emphasize the importance of strategic instruction and learner support in optimizing language learning outcomes. By implementing these recommendations, language educators can foster a more effective and engaging language learning experience for their students.

Author Contributions

F.Ç. and D.B.A.Y. contributed to the conception, design, data collection, and data analysis of the study. E.N. contributed to the development of the theoretical framework, interpretation of the findings, and drafting and critical revision of the manuscript. All authors have contributed to writing of the paper. All authors also read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

This study was reviewed and approved by the Ondokuz Mayıs University Ethics Committee for Social and Human

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Informed Consent Statement

Written informed consent was obtained from parents or legal guardians, and written assent was obtained from all student participants prior to data collection. Participation was voluntary, students could withdraw at any time without penalty, and confidentiality was protected through anonymization and secure data handling within password-protected digital files.

Data Availability Statement

The fully anonymized data used in this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare no conflict of interest.

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