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The Effect of Client-Centered Counseling on Elementary Students' Self-Regulated Linguistic Ability

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A B S T R A C T

Purpose: The present study aimed to investigate the effectiveness of a client-centered counseling intervention in improving self-regulated linguistic ability among elementary school students.

Methods and Materials: This study employed a quasi-experimental design with a pretest–posttest–follow-up structure and a control group. The sample consisted of 60 elementary students aged 9–11 years from Kermanshah, Iran, who were selected through convenience sampling and assigned to experimental and control groups using matched-pair randomization. The experimental group participated in 12 weekly sessions of client-centered counseling based on Rogerian principles, while the control group continued regular classroom activities. Data were collected using the Self-Regulated Linguistic Ability Scale (SRLAS), an observational checklist of linguistic behaviors, language sample analysis (including mean length of utterance, lexical diversity, and self-corrections), and teacher ratings of academic language performance. Data were analyzed using mixed-design ANOVA and MANOVA to examine group, time, and interaction effects, along with effect size calculations and post hoc comparisons.

Findings: The results revealed significant group × time interaction effects for overall self-regulated linguistic ability and all subcomponents, with large effect sizes (η^2 ranging from 0.22 to 0.42). The experimental group demonstrated statistically significant improvements from pretest to posttest ($p < .001$) and maintained these gains at follow-up, whereas the control group showed no significant changes. Posttest comparisons indicated significant differences between groups in favor of the experimental condition ($p < .001$, Cohen's $d > 1.00$). Additionally, multivariate analyses confirmed significant improvements in linguistic performance indicators, including mean length of utterance, lexical diversity, and frequency of self-corrections.

Conclusion: The findings indicate that client-centered counseling is a highly effective intervention for enhancing self-regulated linguistic ability in elementary students, promoting both metacognitive and behavioral aspects of language use, with sustained effects over time.

Keywords: *Client-centered counseling, self-regulated learning, linguistic ability, elementary students, language development*

1. Introduction

The rapid transformation of educational systems in the twenty-first century has intensified attention toward the integration of cognitive, linguistic, and socio-emotional competencies in early schooling. Among these competencies, self-regulation has emerged as a foundational construct influencing a wide range of academic and developmental outcomes. Self-regulation refers to learners' capacity to plan, monitor, and evaluate their own cognitive and behavioral processes in pursuit of goals, and it is increasingly recognized as a critical determinant of success in language learning contexts (Amirian et al., 2015; Barnes & McClelland, 2017). Within language development, this construct takes on a more specialized form known as self-regulated linguistic ability, which encompasses the capacity to consciously observe, assess, and modify one's own language use during communication. This ability bridges the gap between linguistic knowledge and functional communication, making it essential for both academic achievement and social interaction (Hughes et al., 2025; Qi et al., 2025; Saputra et al., 2025).

Theoretical perspectives in developmental psychology emphasize that language and self-regulation are deeply intertwined processes. According to sociocultural theory, language functions as a primary tool for mediating thought and behavior, enabling children to internalize regulatory processes through social interaction (Vygotsky, 1978). As children acquire linguistic resources, they simultaneously develop the capacity to guide their own thinking and behavior, transforming external dialogue into internal self-regulation. Contemporary research supports this theoretical position, demonstrating that the development of linguistic competence facilitates metacognitive awareness, problem-solving, and behavioral control (Kent, 2024). Thus, interventions targeting language development may have broader implications for enhancing self-regulatory capacities.

Empirical studies have consistently demonstrated the reciprocal relationship between self-regulation and language development. Longitudinal research has shown that self-regulation and semantic knowledge mutually reinforce each other over time, contributing to improved reading comprehension and academic performance (Day et al., 2016). Similarly, studies on self-regulated learning strategies have revealed that learners who actively monitor and adjust their learning processes achieve higher levels of language proficiency (Ghelichli et al., 2023; Maghsoudi et al., 2022). These findings highlight the importance of fostering self-regulatory skills within language education, particularly during early developmental stages when these abilities are most malleable.

Recent advances in educational interventions further underscore the significance of self-regulation in language learning. Structured programs designed to enhance self-regulatory strategies have been shown to improve both linguistic performance and academic engagement (Mahdizadeh et al., 2024; Mohammadi et al., 2024). Additionally, digital and technology-enhanced learning environments have demonstrated the potential to support self-regulated learning by providing learners with real-time feedback and opportunities for reflection (Ahmadi Safa & Lotfi, 2025; Yazdani & Sadeghi, 2022). Despite these promising developments, many existing interventions focus primarily on cognitive and instructional strategies, often overlooking the relational and emotional dimensions of learning that may significantly influence self-regulation.

In parallel, research in speech-language pathology and communication disorders has highlighted the role of interactional and relational factors in language development. Conversation-based interventions have been shown to improve children's communicative abilities by fostering active participation and reflective engagement (Hughes et al., 2025). Similarly, culturally responsive approaches emphasize the importance of aligning interventions with learners' linguistic and social contexts to enhance effectiveness (Botha & Gerber, 2023). Play-based and therapeutic interventions have also demonstrated significant improvements in language skills and social adjustment among children, suggesting that emotionally supportive environments can facilitate linguistic development (Rezaee Rezvan et al., 2022). These findings indicate that language learning is not solely a cognitive process but is deeply embedded in social and emotional interactions.

Within this context, client-centered counseling offers a theoretically robust framework for addressing the relational dimensions of learning. Originating from the humanistic psychology of Carl Rogers, client-centered counseling emphasizes core therapeutic conditions such as unconditional positive regard, empathetic understanding, and genuineness as catalysts for personal growth (Rogers, 1961). These conditions create a psychologically safe environment in which individuals feel accepted and understood, thereby facilitating self-exploration and self-directed learning. In educational settings, such an environment may enable students to engage more deeply

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with their own learning processes, including the regulation of language use.

The application of client-centered principles to language learning has historical roots in approaches such as Community Language Learning, where the teacher assumes a facilitative, counselor-like role to support learners' emotional and cognitive needs (Kim, 1981). Contemporary scholarship extends this perspective by highlighting the importance of the therapeutic relationship in communication interventions. It has been argued that addressing communication challenges requires attention to the whole person, including emotional and relational dimensions, rather than focusing solely on linguistic deficits (Stein-Rubin & Adler, 2024). This holistic approach aligns closely with the principles of client-centered counseling and suggests potential pathways for enhancing self-regulated linguistic ability.

Emerging empirical evidence supports the effectiveness of counseling-based and coaching-oriented approaches in improving language-related outcomes. For instance, coaching techniques that emphasize learner autonomy and reflective practice have been shown to reduce language errors and enhance self-regulation among elementary students (Saputra et al., 2025). Similarly, educational models that integrate counseling psychology principles into teaching practices have demonstrated significant improvements in language proficiency, motivation, and collaboration (Narmashiri et al., 2021). These findings indicate that relational and student-centered approaches can complement traditional instructional methods, providing a more comprehensive framework for language development.

Furthermore, therapeutic and counseling-based interventions have shown promise in supporting children with communication challenges. Research comparing different speech therapy delivery models has revealed that collaborative and relationship-based approaches can lead to significant improvements in language skills (Aminian et al., 2024). In addition, interventions targeting self-regulation in elementary students have been found to enhance executive functions and learning outcomes, highlighting the importance of integrating cognitive and emotional support mechanisms (Nazari et al., 2024). These studies suggest that interventions grounded in relational principles may be particularly effective in fostering both linguistic and self-regulatory development.

Despite these advances, significant gaps remain in the literature. Much of the existing research has focused either on structured instructional interventions or on clinical populations with diagnosed language disorders, leaving the potential of client-centered counseling for typically developing elementary students largely unexplored (Harris et al., 2023). Moreover, while theoretical frameworks suggest strong connections between therapeutic conditions and self-regulated linguistic processes, empirical studies directly examining these relationships are limited. This gap is particularly pronounced in contexts such as Iran, where cultural and linguistic diversity may influence the effectiveness of different intervention approaches.

The Iranian educational context presents unique opportunities and challenges for investigating these issues. Studies have shown that self-regulation plays a significant role in language learning among Iranian students, with higher levels of self-regulation associated with better language proficiency and academic outcomes (Ghelichli et al., 2023; Maghsoudi et al., 2022). At the same time, research indicates that culturally responsive and contextually adapted interventions are essential for addressing the diverse needs of learners (Botha & Gerber, 2023). Integrating client-centered counseling into this context may provide a novel approach for enhancing self-regulated linguistic ability while addressing the socio-emotional dimensions of learning.

Another important consideration is the measurement of meaningful change in educational and therapeutic interventions. The concept of clinical significance, which emphasizes the practical and real-world impact of interventions, provides a useful framework for evaluating outcomes beyond statistical significance (Jacobson & Truax, 1991). Applying this perspective to educational research can help ensure that interventions not only produce measurable improvements but also lead to meaningful changes in students' communicative abilities and academic performance.

In addition, insights from interdisciplinary sources highlight the importance of integrating play, narrative, and social interaction into language development. Play-based approaches have been shown to support the development of literacy and communication skills by providing opportunities for meaningful engagement and self-expression (Psychotherapy Networker, 2017). Similarly, research on reading comprehension and self-regulated learning strategies demonstrates the transferability of regulatory processes across languages and contexts, underscoring the universality of these mechanisms (Qi et al., 2025). These findings reinforce the notion that language

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development is a dynamic and multifaceted process influenced by cognitive, emotional, and social factors.

Taken together, the literature suggests that self-regulated linguistic ability is a critical yet underexplored domain that sits at the intersection of language development, self-regulation, and socio-emotional learning. While existing research provides strong evidence for the effectiveness of self-regulation training and language interventions, the potential contribution of client-centered counseling remains insufficiently examined. Given its emphasis on relational conditions that foster autonomy, reflection, and personal growth, client-centered counseling may offer a unique and powerful approach for enhancing self-regulated linguistic ability in elementary students.

Therefore, the present study aims to investigate the effect of client-centered counseling on self-regulated linguistic ability among elementary school students.

2. Methods and Materials

2.1. Study Design and Participants

This investigation utilized a quasi-experimental design featuring pretest, posttest, and follow-up assessments with a control group to examine the influence of client-centered counseling on the self-regulated linguistic ability of Iranian elementary students. The quasi-experimental approach was deemed suitable due to the practical limitations of implementing full random assignment in school environments, while still permitting reasonably sound causal inferences about the intervention's impact (Creswell & Creswell, 2018). The design involved an experimental group that received the client-centered counseling intervention and a control group that received no intervention, with both groups evaluated at three time points: before the intervention (pretest), immediately after (posttest), and at a delayed follow-up.

The participant pool consisted of 60 elementary school students aged 9 to 11 years (enrolled in grades three to five) recruited from two public schools in Kermanshah, Iran. Convenience sampling was used, guided by accessibility and institutional practicalities. The sample size was determined following Cohen's (1988) power analysis guidelines for detecting medium effect sizes (f = 0.25) with 80% power at an alpha level of 0.05, which indicated a requirement of approximately 26 participants per group. To accommodate potential attrition, 30 students were initially assigned to each condition.

Inclusion criteria were: (a) current enrollment in grades three through five, (b) Persian as the main language of classroom instruction, (c) no prior diagnosis of a developmental language disorder or intellectual disability, and (d) no concurrent participation in other counseling or specialized language intervention programs. Exclusion criteria comprised: (a) diagnosed neurological conditions that affect communication, (b) significant hearing or visual impairments, and (c) a pattern of school absence exceeding 20% during the prior academic term.

Assignment to the experimental or control group was performed using matched-pair randomization. This procedure matched participants based on their pretest scores on the self-regulated linguistic ability measure to ensure the groups were equivalent at baseline (Gall et al., 2007).

2.2. Measures

Self-Regulated Linguistic Ability Scale (SRLAS): Researchers developed this scale to evaluate participants' ability to monitor, assess, and modify their language use during communication. It was adapted from established self-regulation tools, notably the Motivated Strategies for Learning Questionnaire (Pintrich et al., 1993) and the Children's Self-Regulation in Language Learning Scale (adapted from Maghsoudi et al., 2022). The SRLAS contains 25 items distributed across three subscales: (a) metacognitive awareness of language use (10 items), (b) self-monitoring during communication (8 items), and (c) strategic adjustment of linguistic output (7 items). Responses were recorded on a 5-point Likert scale ranging from 1 (*never true of me*) to 5 (*always true of me*). The scale was translated into Persian using a forward-backward translation process (Brislin, 1970) and its content validity was established through review by a panel of five experts in counseling psychology, applied linguistics, and educational measurement.

Observational Checklist of Self-Regulated Linguistic Behavior: A structured observational checklist was created to directly evaluate participants' self-regulated linguistic behaviors during structured communication tasks. Informed by the work of Hughes et al. (2025) and Day et al. (2016), the checklist included 15 observable behaviors, such as self-correcting errors, pausing to plan statements, asking for clarification, and modifying language based on listener feedback. Trained research assistants used this checklist during 15-minute semi-structured conversation tasks

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between participants and peers, and between participants and a researcher (Day et al., 2016; Hughes et al., 2025).

Language Sample Analysis: Language samples were gathered using a 10-minute narrative retelling task, following procedures outlined by Hughes et al. (2025). Participants viewed a wordless picture book and then retold the story to a researcher. The audio-recorded samples were transcribed verbatim and analyzed for (a) mean length of utterance, (b) type-token ratio (an index of vocabulary diversity), (c) frequency of self-corrections, and (d) use of metacognitive language markers (e.g., "I think," "maybe," "I mean").

Academic Language Performance Measure: Teachers assessed participants' performance on classroom language tasks using a 10-item Academic Language Performance Scale developed for this study. Teachers rated each student's performance in domains such as oral expression, listening comprehension, and written language on a 5-point scale. This measure provided ecological validity by capturing language performance within authentic classroom contexts.

2.3. Procedure

The study unfolded in several sequential phases. First, ethical approvals were secured from school principals and parents, and assent was obtained from each child participant. During the week before the intervention began, the pretest assessment was administered. All participants completed the SRLAS individually with a research assistant, language samples were collected, and observational assessments were conducted. Teachers also completed the Academic Language Performance Scale for each participant.

The client-centered counseling intervention was delivered over 12 weekly sessions, each lasting 45 minutes, to small groups of 5-6 students. The protocol was adapted from principles of child-centered play therapy and client-centered counseling frameworks for educational settings (Narmashiri et al., 2021; Stein-Rubin & Adler, 2024). Each session followed a consistent structure: (a) welcome and check-in (5 minutes), (b) child-directed activity (25 minutes), (c) facilitated reflection (10 minutes), and (d) closure (5 minutes). The intervention emphasized the three core conditions of client-centered counseling:

1. ***Unconditional Positive Regard:*** The counselor conveyed acceptance and respect for each child's thoughts, feelings, and language without judgment, allowing free expression without fear of correction.
2. ***Empathetic Understanding:*** The counselor practiced active listening, accurately reflected feelings and content, and communicated an understanding of the child's perspective through paraphrasing and summarizing.
3. ***Genuineness:*** The counselor interacted authentically, avoiding scripted responses, and modeled honest self-expression.

Counselors also employed specific skills, including:

- Tracking behavior (neutrally describing actions)
- Reflecting content (paraphrasing verbalizations)
- Reflecting feelings (identifying and naming emotions)
- Facilitating decision-making
- Esteem-building (acknowledging effort without creating dependency)
- Returning responsibility to the child.

Two licensed counselors with master's degrees in counseling psychology and specialized child-centered training delivered the intervention. They completed 20 hours of protocol training involving didactic instruction, video modeling, and supervised practice. Sessions incorporated developmentally appropriate activities to elicit natural language, such as free play with puppets and art supplies, collaborative storytelling, structured peer conversations, and guided discussions about communication.

Participants in the control group continued their regular classroom routines without receiving the counseling intervention. Within one week after the final intervention session, all participants (both experimental and control groups) completed the same assessment battery as at pretest. The research assistants conducting these assessments were blind to group assignment. To evaluate the maintenance of effects, all participants completed the assessment battery again eight weeks after the posttest.

2.4. Data Analysis

Data were initially screened for missing values, outliers, and violations of parametric test assumptions (normality, homogeneity of variance, sphericity). Descriptive statistics (means and standard deviations) were computed for all variables at each time point. Independent samples t-tests compared pretest scores between groups to verify baseline equivalence.

The primary analysis involved a 2 (group: experimental vs. control) × 3 (time: pretest, posttest, follow-up) mixed between-within subjects analysis of variance (ANOVA) on

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the SRLAS total and subscale scores. Partial eta squared (η^2) was calculated as an effect size measure, interpreted as small (0.01), medium (0.06), or large (0.14) based on Cohen's (1988) conventions (Cohen, 1988).

A multivariate analysis of variance (MANOVA) was conducted to examine intervention effects on the multiple dependent variables from the language sample analysis (mean length of utterance, type-token ratio, self-corrections, metacognitive language). Pearson correlation coefficients were calculated to explore relationships among self-reported ability, observed behavior, and language sample measures.

The internal consistency of the SRLAS was assessed using Cronbach's alpha, with values ≥ 0.70 considered acceptable (Nunnally & Bernstein, 1994). Inter-rater reliability for observational and language sample coding was established by having two trained raters independently code 20% of the data, with intraclass correlation coefficients calculated. Test-retest reliability of the SRLAS was assessed using the control group's pretest and posttest scores. All analyses were performed using SPSS 26 software.

3. Findings and Results

Before conducting primary analyses, the data underwent screening for missing values, outliers, and violations of statistical assumptions. From the initial pool of 60 recruited participants, 57 completed assessments at all three time points (Experimental group: n = 28; Control group: n = 29), resulting in a 95% retention rate. Three participants (two from the experimental group and one from the control group) were lost to follow-up due to family relocation. Little's Missing Completely at Random (MCAR) test was non-significant, $\chi^2(45) = 38.62$, $p = .74$, indicating the missing data pattern was random. Multiple imputation with five imputations was used to handle the missing data for intention-to-treat analyses.

Examination of boxplots identified no univariate outliers (defined as z-scores beyond ±3.29). Assessment of Mahala Nobis distance indicated no multivariate outliers at the $p < .001$ threshold. Shapiro-Wilk tests confirmed that the distributions for all dependent variables were normal ($p > .05$). Levene's tests were non-significant for all variables at pretest ($p > .05$), confirming homogeneity of variances. Box's M test was non-significant ($p = .38$), indicating homogeneity of covariance matrices between groups. Mauchly's test of sphericity was non-significant for the repeated measures factor ($p > .05$), meeting the sphericity assumption.

3.1. *Baseline Equivalence*

Independent samples t-tests were conducted to compare the experimental and control groups on all pretest measures. As summarized in Table 1, no statistically significant differences were found between the groups on any dependent variable at pretest, confirming the success of the matched-pair randomization procedure. The mean age was comparable between the experimental group ($M = 9.87$, $SD = 0.94$) and the control group ($M = 9.93$, $SD = 0.98$), $t(55) = 0.24$, $p = .81$. The gender distribution was also equivalent between groups, $\chi^2(1) = 0.31$, $p = .58$.

Table 1

Pretest Comparisons Between Experimental and Control Groups

Variable	Experimental (n = 28) M (SD)	Control (n = 29) M (SD)	t	df	p	Cohen's d
SRLAS Total	68.43 (8.76)	67.89 (9.12)	0.23	55	.82	0.06
Metacognitive Awareness	27.14 (4.23)	26.98 (4.45)	0.14	55	.89	0.04
Self-Monitoring	21.86 (3.67)	21.54 (3.89)	0.32	55	.75	0.09
Strategic Adjustment	19.43 (3.12)	19.37 (3.28)	0.07	55	.94	0.02
MLU (morphemes)	4.87 (1.23)	4.92 (1.18)	0.16	55	.88	0.04
Type-Token Ratio	0.48 (0.07)	0.47 (0.08)	0.51	55	.61	0.14
Self-Corrections (frequency)	2.43 (1.12)	2.51 (1.08)	0.28	55	.78	0.08
Teacher Ratings	32.67 (5.43)	33.12 (5.67)	0.31	55	.76	0.08

Note. SRLAS = Self-Regulated Linguistic Ability Scale; MLU = Mean Length of Utterance. All t-tests non-significant at $p > .05$.

3.2. *Descriptive Statistics*

Means and standard deviations for all dependent variables across the three assessment points are presented in Table 2. Visual inspection of the data shows that the experimental group exhibited increases from pretest to posttest on every measure, with these gains largely maintained at the 8-week

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follow-up. In contrast, the control group displayed minimal change across the three time points.

Table 2

Descriptive Statistics for Dependent Variables Across Time Points

Variable	Group	Pretest M (SD)	Posttest M (SD)	Follow-up M (SD)
SRLAS Total	Exp	68.43 (8.76)	78.92 (7.84)	77.86 (8.12)
	Con	67.89 (9.12)	68.34 (8.97)	68.12 (9.03)
Metacognitive Awareness	Exp	27.14 (4.23)	31.86 (3.87)	31.24 (4.02)
	Con	26.98 (4.45)	27.23 (4.32)	27.08 (4.51)
Self-Monitoring	Exp	21.86 (3.67)	25.43 (3.21)	25.12 (3.34)
	Con	21.54 (3.89)	21.67 (3.78)	21.49 (3.92)
Strategic Adjustment	Exp	19.43 (3.12)	21.63 (2.89)	21.50 (2.94)
	Con	19.37 (3.28)	19.44 (3.19)	19.55 (3.27)
MLU (morphemes)	Exp	4.87 (1.23)	5.86 (1.18)	5.72 (1.21)
	Con	4.92 (1.18)	4.98 (1.21)	4.95 (1.19)
Type-Token Ratio	Exp	0.48 (0.07)	0.56 (0.06)	0.55 (0.06)
	Con	0.47 (0.08)	0.48 (0.07)	0.48 (0.07)
Self-Corrections	Exp	2.43 (1.12)	4.67 (1.34)	4.52 (1.28)
	Con	2.51 (1.08)	2.58 (1.15)	2.54 (1.19)
Teacher Ratings	Exp	32.67 (5.43)	38.92 (4.87)	38.12 (5.02)
	Con	33.12 (5.67)	33.45 (5.54)	33.23 (5.61)

Note. Exp = Experimental group (n = 28); Con = Control group (n = 29); SRLAS = Self-Regulated Linguistic Ability Scale; MLU = Mean Length of Utterance.

3.3. *Intervention Effects on Self-Regulated Linguistic Ability*

A 2 (group: experimental vs. control) × 3 (time: pretest, posttest, follow-up) mixed between-within subjects ANOVA was performed on the SRLAS total scores. The analysis revealed a significant main effect for time, Wilks' Lambda = 0.52, $F(2, 54) = 24.86$, $p < .001$, $\eta^2 = 0.48$, indicating changes occurred across the assessment points. The main effect for group was also significant, $F(1, 55) = 8.94$, $p = .004$, $\eta^2 = 0.14$, with the experimental group scoring higher overall.

Most importantly, the group × time interaction was significant, Wilks' Lambda = 0.61, $F(2, 54) = 17.32$, $p < .001$, $\eta^2 = 0.39$. This large effect size indicates that 39% of the variance in change scores is attributable to the intervention, and it confirms that the pattern of change over time differed significantly between the groups.

Follow-up paired samples t-tests with a Bonferroni correction ($\alpha = .017$) examined within-group changes. The experimental group showed significant increases from pretest to posttest, $t(27) = 7.84$, $p < .001$, Cohen's d = 1.48, and from pretest to follow-up, $t(27) = 6.92$, $p < .001$, Cohen's d = 1.31. The difference between posttest and follow-up scores was non-significant, $t(27) = 0.94$, $p = .36$, demonstrating maintenance of gains. The control group showed no significant changes across any time points (all $p > .05$).

Independent samples t-tests at each time point revealed no group differences at pretest, $t(55) = 0.23$, $p = .82$, but significant differences at posttest, $t(55) = 4.67$, $p < .001$, Cohen's d = 1.24, and follow-up, $t(55) = 4.21$, $p < .001$, Cohen's d = 1.13, in favor of the experimental group.

3.3.1. *Subscale Analyses*

Metacognitive Awareness: The group × time interaction for this subscale was significant, Wilks' Lambda = 0.67, $F(2, 54) = 13.42$, $p < .001$, $\eta^2 = 0.33$. The experimental group demonstrated significant increases from pretest to posttest, $t(27) = 6.23$, $p < .001$, Cohen's d = 1.18, with gains maintained at follow-up. The control group showed no significant changes.

Self-Monitoring: Analysis revealed a significant group × time interaction, Wilks' Lambda = 0.71, $F(2, 54) = 11.08$, $p < .001$, $\eta^2 = 0.29$. The experimental group showed significant improvement from pretest to posttest, $t(27) = 5.67$, $p < .001$, Cohen's d = 1.07, which was sustained at follow-up.

Strategic Adjustment: The interaction for this subscale was also significant, Wilks' Lambda = 0.78, $F(2, 54) = 7.63$,

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$p = .001$, $\eta^2 = 0.22$. Participants in the experimental group increased significantly from pretest to posttest, $t(27) = 4.21$, $p < .001$, Cohen's $d = 0.80$, with maintained gains.

3.3.2. *Language Sample Measures*

Mean Length of Utterance (MLU): A 2 × 3 ANOVA on MLU revealed a significant group × time interaction, Wilks' Lambda = 0.73, $F(2, 54) = 9.86$, $p < .001$, $\eta^2 = 0.27$. The experimental group showed significant increases in MLU from pretest to posttest, $t(27) = 4.32$, $p < .001$, Cohen's $d = 0.82$, and from pretest to follow-up, $t(27) = 3.89$, $p = .001$, Cohen's $d = 0.74$. The control group's MLU did not change significantly.

Type-Token Ratio: A significant group × time interaction emerged for type-token ratio, Wilks' Lambda = 0.69, $F(2, 54) = 12.14$, $p < .001$, $\eta^2 = 0.31$. The experimental group demonstrated increased lexical diversity from pretest to posttest, $t(27) = 5.43$, $p < .001$, Cohen's $d = 1.03$, with gains maintained at follow-up.

Frequency of Self-Corrections: Analysis revealed a significant group × time interaction, Wilks' Lambda = 0.58, $F(2, 54) = 19.67$, $p < .001$, $\eta^2 = 0.42$. The experimental group showed a substantial increase in self-corrections from pretest to posttest, $t(27) = 8.12$, $p < .001$, Cohen's $d = 1.54$, indicating enhanced self-monitoring during communication. Gains were maintained at follow-up, $t(27) = 7.43$, $p < .001$, Cohen's $d = 1.40$.

Metacognitive Language Use: The frequency of metacognitive language markers (e.g., "I think," "maybe") increased significantly in the experimental group from pretest ($M = 1.87$, $SD = 1.02$) to posttest ($M = 4.23$, $SD = 1.34$), $t(27) = 6.89$, $p < .001$, Cohen's $d = 1.30$, with maintenance at follow-up ($M = 4.08$, $SD = 1.28$). The control group showed no significant change.

3.3.3. *Teacher Ratings of Academic Language Performance*

The group × time interaction for teacher ratings was significant, Wilks' Lambda = 0.64, $F(2, 54) = 15.23$, $p < .001$, $\eta^2 = 0.36$. Participants in the experimental group received significantly higher teacher ratings at posttest compared to pretest, $t(27) = 5.89$, $p < .001$, Cohen's $d = 1.11$, and these gains were maintained at follow-up. Control group ratings did not change significantly.

3.4. *Relationships Among Dependent Variables*

Pearson correlation coefficients were calculated to examine relationships among the measures at posttest (see Table 3). Moderate to strong positive correlations emerged among all measures, providing evidence for the convergent validity of the assessments.

Table 3

Intercorrelations Among Dependent Variables at Posttest

Variable	1	2	3	4	5	6
1. SRLAS Total	—					
2. MLU	.58**	—				
3. Type-Token Ratio	.62**	.54**	—			
4. Self-Corrections	.71**	.49**	.56**	—		
5. Metacognitive Language	.67**	.51**	.53**	.63**	—	
6. Teacher Ratings	.73**	.55**	.59**	.64**	.61**	—

** $p < .01$.

Effect sizes (Cohen's d) for all dependent variables are summarized in Table 4. According to Cohen's (1988) conventions, effects ranging from 0.80 to 1.54 represent large intervention effects across all measures. The largest effects were observed for self-correction frequency, SRLAS total scores, and metacognitive language use.

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Table 4

Effect Sizes (Cohen's d) for Intervention Effects from Pretest to Posttest

Variable	Within-Group Effect Size (Experimental)	Between-Group Effect Size at Posttest
SRLAS Total	1.48	1.24
Metacognitive Awareness	1.18	1.09
Self-Monitoring	1.07	0.98
Strategic Adjustment	0.80	0.71
Mean Length of Utterance	0.82	0.75
Type-Token Ratio	1.03	0.94
Self-Corrections	1.54	1.42
Metacognitive Language	1.30	1.21
Teacher Ratings	1.11	1.03

To assess clinical significance, the proportion of participants showing reliable improvement was calculated using the Jacobson and Truax (1991) reliable change index (RCI). Participants were classified as showing reliable improvement if their RCI exceeded 1.96. In the experimental group, 82.1% (n = 23) showed reliable improvement on SRLAS total scores, compared to 10.3% (n = 3) in the control group, $\chi^2(1) = 29.64$, $p < .001$, $\varphi = 0.72$. Similarly, 75.0% of experimental participants showed reliable improvement in self-correction frequency, compared to 6.9% of controls, $\chi^2(1) = 26.87$, $p < .001$, $\varphi = 0.68$.

In sum, the results demonstrate that the client-centered counseling intervention produced significant and substantial improvements in the Iranian elementary students' self-regulated linguistic ability. Compared to the control group, the experimental group showed significant increases in self-reported self-regulated linguistic ability (across all subscales) with large effect sizes, and these gains were maintained at the eight-week follow-up. Language sample analyses confirmed significant improvements in the experimental group's mean length of utterance, lexical diversity, frequency of self-corrections, and use of metacognitive language. Teacher ratings confirmed that intervention effects generalized to classroom contexts. Strong correlations among the different measures provided evidence for convergent validity. The proportion of participants showing clinically reliable change was substantially higher in the experimental group (75-82%) compared to the control group (7-10%). These findings provide strong empirical support for the effectiveness of client-centered counseling in enhancing self-regulated linguistic ability among Iranian elementary students.

4. Discussion and Conclusion

The present study aimed to examine the effectiveness of client-centered counseling in enhancing self-regulated linguistic ability among elementary students, and the findings provide strong empirical support for this relationship. The results demonstrated significant group × time interaction effects across all major dependent variables, including overall self-regulated linguistic ability and its subcomponents of metacognitive awareness, self-monitoring, and strategic adjustment. These effects were accompanied by large effect sizes, indicating that the intervention accounted for a substantial proportion of variance in students' developmental trajectories. Moreover, the experimental group exhibited significant improvements from pretest to posttest, and importantly, these gains were maintained at follow-up, while the control group showed no meaningful changes. This pattern of findings underscores the effectiveness and durability of the client-centered counseling approach in promoting both cognitive and behavioral aspects of language self-regulation.

These findings align with theoretical perspectives that emphasize the central role of self-regulation in learning processes. Self-regulated learning theory posits that learners actively engage in planning, monitoring, and evaluating their performance, which directly contributes to improved academic outcomes (Amirian et al., 2015). The observed improvements in metacognitive awareness and self-monitoring among participants in the experimental group suggest that client-centered counseling effectively facilitated these processes. This is consistent with previous research demonstrating that interventions targeting self-regulation can significantly enhance learning outcomes and cognitive functioning in children (Barnes & McClelland, 2017; Nazari et al., 2024). In particular, the maintenance of gains at

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follow-up supports the notion that self-regulatory skills, once developed, can become internalized and sustain long-term behavioral change.

The significant improvements in linguistic performance indicators, such as mean length of utterance, lexical diversity, and frequency of self-corrections, further highlight the impact of the intervention on functional language use. These findings are consistent with research demonstrating that self-regulation and language development are reciprocally related processes (Day et al., 2016). As students become more capable of monitoring and adjusting their language, they are better able to produce coherent and complex linguistic output. Similarly, studies have shown that higher levels of self-regulation are associated with improved language proficiency and academic achievement (Ghelichli et al., 2023; Maghsoudi et al., 2022). The present results extend this body of research by demonstrating that a counseling-based intervention can effectively enhance these abilities in elementary students.

From a theoretical standpoint, the findings can be interpreted through the lens of sociocultural theory, which emphasizes the role of language as a mediational tool for cognitive development. According to this perspective, children internalize self-regulatory processes through social interaction and dialogue (Vygotsky, 1978). Client-centered counseling, with its emphasis on empathetic communication and reflective dialogue, provides an ideal context for such internalization. The supportive relational environment created by the counselor likely enabled students to articulate their thoughts and feelings more freely, thereby strengthening their metacognitive awareness and self-regulatory capacities. This interpretation is supported by contemporary research highlighting the importance of teaching children the language of self-regulation to facilitate cognitive and behavioral control (Kent, 2024).

The role of the therapeutic relationship in facilitating these outcomes is particularly noteworthy. Client-centered counseling is grounded in the principles of unconditional positive regard, empathy, and genuineness, which are believed to foster a sense of psychological safety and autonomy (Rogers, 1961). These conditions may have encouraged students to take linguistic risks, reflect on their communication, and engage in self-correction without fear of judgment. This interpretation is consistent with research emphasizing the importance of addressing the whole person in communication interventions, rather than focusing solely on linguistic deficits (Stein-Rubin & Adler, 2024). Furthermore, the relational nature of the intervention aligns with findings from counseling-integrated educational approaches, which have been shown to enhance language proficiency, motivation, and collaborative learning (Narmashiri et al., 2021).

The observed improvements in self-regulated linguistic ability can also be linked to coaching-based and student-centered learning approaches. Previous studies have demonstrated that coaching techniques emphasizing autonomy, reflection, and error recognition can significantly improve language performance and self-regulation in elementary students (Saputra et al., 2025). The present intervention shares key features with these approaches, including a focus on learner agency and reflective practice. By allowing students to guide their own learning within a supportive environment, client-centered counseling may have facilitated deeper engagement with language processes and promoted the development of self-regulatory strategies.

In addition, the findings are consistent with research on conversation-based and interactional interventions in speech-language pathology. Studies have shown that interventions focusing on conversational engagement can lead to significant improvements in communicative behaviors and language complexity (Hughes et al., 2025). The use of dialogue and reflective listening in the present study likely contributed to similar outcomes, as students were encouraged to actively participate in communication and reflect on their language use. This is further supported by evidence that play-based and interactive approaches can enhance language development and social adjustment in children (Rezaee Rezvan et al., 2022). The integration of such elements within a client-centered framework may have amplified their effectiveness.

Another important aspect of the findings is their relevance to culturally responsive and contextually grounded interventions. Research has highlighted the importance of aligning communication interventions with learners' cultural and linguistic backgrounds to maximize effectiveness (Botha & Gerber, 2023). The present study, conducted within the Iranian educational context, demonstrates that client-centered counseling can be successfully adapted to local conditions and produce meaningful outcomes. This is particularly significant given the linguistic diversity of the Iranian population and the need for interventions that accommodate varying language backgrounds (Maghsoudi et al., 2022).

The significant effect sizes observed in this study also suggest that the intervention produced changes that are not only statistically significant but also practically meaningful.

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From the perspective of clinical significance, these findings indicate that a substantial proportion of students experienced meaningful improvements in their linguistic abilities (Jacobson & Truax, 1991). This has important implications for educational practice, as it suggests that client-centered counseling can produce real-world benefits that extend beyond test scores to impact students' everyday communication and academic performance.

The results also contribute to the growing body of literature on self-regulated learning in diverse educational contexts. Studies have shown that self-regulated learning strategies are transferable across languages and learning environments, supporting both first and second language development (Qi et al., 2025). The present findings extend this research by demonstrating that these strategies can be effectively fostered through counseling-based interventions, highlighting the potential for integrating psychological and educational approaches.

Moreover, the findings complement research on digital and structured learning interventions, which have been shown to enhance self-regulation through feedback and guided discovery (Ahmadi Safa & Lotfi, 2025; Yazdani & Sadeghi, 2022). However, unlike these approaches, client-centered counseling emphasizes the relational and emotional dimensions of learning, suggesting that these factors may play a critical role in the development of self-regulated linguistic ability. This highlights the need for a more holistic approach to language education that integrates cognitive, emotional, and social components.

Finally, the methodological rigor of the study, including the use of a quasi-experimental design and matched-pair randomization, strengthens the validity of the findings. Such designs are widely recognized as appropriate for educational research where full randomization is not feasible (Gall et al., 2007). The consistency of the results across multiple measures further supports the robustness of the conclusions.

Despite the strengths of this study, several limitations should be acknowledged. The sample size, although adequate for detecting significant effects, was relatively small and limited to a specific geographic region, which may restrict the generalizability of the findings. Additionally, the use of convenience sampling may have introduced selection bias. The reliance on self-report measures and teacher ratings, while providing valuable insights, may also be subject to subjective bias. Furthermore, the follow-up period was limited to eight weeks, and longer-term effects of the intervention remain unknown. Finally, the study did not examine potential moderating variables such as gender, socioeconomic status, or baseline language proficiency, which may influence the effectiveness of the intervention.

Future research should aim to address these limitations by employing larger and more diverse samples across different cultural and educational contexts. Longitudinal studies with extended follow-up periods are needed to assess the durability of intervention effects over time. Additionally, future studies could explore the mechanisms underlying the effectiveness of client-centered counseling, including the specific roles of empathy, autonomy support, and reflective dialogue. Comparative studies examining the relative effectiveness of client-centered counseling versus other instructional and therapeutic approaches would also be valuable. Moreover, integrating qualitative methods could provide deeper insights into students' experiences and the processes through which self-regulated linguistic ability develops.

From a practical perspective, the findings of this study have important implications for educational practice. Educators and school counselors can incorporate client-centered principles into classroom interactions to create supportive and autonomy-enhancing learning environments. Training programs for teachers and counselors should emphasize the development of empathetic communication skills and the ability to facilitate reflective dialogue. Schools may also consider integrating counseling-based interventions into language curricula to support students' linguistic and self-regulatory development. Finally, policymakers should recognize the importance of addressing the socio-emotional dimensions of learning and allocate resources to support the implementation of holistic, relationship-based educational approaches.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the study and participated in the research with informed consent.

References

Ahmadi Safa, M., & Lotfi, J. (2025). Iranian EFL learners' online self-regulated learning, use of communication strategies, test anxiety, and online speaking test performance: A structural equation modeling approach. *International Journal of Language Testing*, *15*(1), 173-192.

Aminian, M., Karbalaei Sadegh, M., Salmani, M., & Ameri, H. (2024). Comparing the applicability of three different speech therapy service delivery models for preschoolers with intellectual disability: A single-blind randomized controlled trial. *Journal of Rehabilitation Sciences and Research*, *11*(2), 94-101.

Amirian, S. M. R., Mallahi, O., & Zaghi, S. (2015). The relationship between Iranian EFL students' self-regulation capacity and their language learning outcomes. *Iranian Journal of Language teaching research*, *3*(2), 81-98.

Barnes, S. P., & McClelland, M. M. (2017). A randomized controlled trial of a curriculum-based intervention to improve self-regulation in preschool children. *Frontiers in psychology*, *8*, 23-66. https://doi.org/10.3389/fpsyg.2017.02366

Botha, W., & Gerber, B. (2023). "We don't speak the same language": The lived experiences of speech-language therapists providing early communication intervention in a public healthcare system. *International Journal of Language and Communication Disorders*, *58*(4), 1230-1244.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, *1*(3), 185-216. https://doi.org/10.1177/135910457000100301

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Lawrence Erlbaum Associates.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications.

Day, S. L., Phillips, B. M., Sparapani, N., Ingebrand, S. W., McLean, C., Barrus, A., & Kaschak, M. P. (2016). A "lattice model" of development: A longitudinal investigation of reciprocal effects among self-regulation, semantic knowledge, and reading comprehension. *Frontiers in psychology*, *7*, 1406. https://doi.org/10.3389/fpsyg.2016.01406

Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational research: An introduction (8th ed.)*. Pearson Education.

Ghelichli, Y., Seyyedrezaei, S. H., & Seyyedrezaei, M. (2023). The relationship among Iranian EFL learners' engagement, self-regulation, and learning outcomes. *Journal of Language and Education*, *9*(2), 67-82. https://doi.org/10.17323/jle.2023.12741

Harris, K. R., Kim, Y. S., Yim, S., Camping, A., & Graham, S. (2023). Yes, they can: Developing transcription skills and oral language in tandem with SRSD instruction on close reading of science text to write informative essays at grades 1 and 2. *Contemporary Educational Psychology*, *73*, 102150. https://doi.org/10.1016/j.cedpsych.2023.102150

Hughes, L., Newton, C., Corrin, J., & Best, W. (2025). "Better Conversations With Developmental Language Disorder": A conversation-focused intervention for children. *International Journal of Language and Communication Disorders*, *60*(1), e70012.

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of consulting and clinical psychology*, *59*(1), 12-19. https://doi.org/10.1037/0022-006X.59.1.12

Kent, D. (2024). Teaching children the language of self-regulation. *The ASHA Leader*, *29*(3/4). https://leader.pubs.asha.org/do/10.1044/leader.MIW.29032024.slp-self-regulation.30/full/

Kim, J. H. (1981). Community Language Learning and client-centered therapy. *Ewha Woman's University Korean Cultural Research Institute Journal*.

Maghsoudi, M., Khamijani Farahani, E., & Jalali, M. (2022). The relationship between self-regulation skill and additional language learning: A study of Iranian monolingual and bilingual learners. *Iranian Journal of Language teaching research*, *10*(2), 45-62.

Mahdizadeh, M., Pakdaman, M., Ebrahimpor, M., & Saeidi, A. (2024). The effectiveness of self-regulation training based on creative representation on self-regulation and motivation of academic progress of primary school students. *Early Childhood Health And Education*, *5*(2), 1-14.

Mohammadi, F., Azimi, E., & Talaee, E. (2024). The effectiveness of learning analytics dashboards in synchronous e-learning environments for enhancing students' engagement. *Journal of Curriculum Studies*, *19*(74), 213-236.

Narmashiri, F., Fatehi Rad, N., & Tajadini, M. (2021). Beyond the solitary teacher: Team teaching style and counseling psychology in promoting students' language proficiency, collaboration and inborn encouragement. *Iranian Evolutionary Educational Psychology Journal*, *3*(2), 178-197. https://doi.org/10.52547/ieepj.3.2.178

Nazari, H., Ghasemi, A., & Akbari, M. (2024). The effectiveness of self-regulation learning training on the executive functions of male elementary school students with reading disabilities. *Journal of Applied Research in Counseling*, *7*(1), 45-62.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory (3rd ed.)*. McGraw-Hill.

Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1993). Reliability and predictive validity of the Motivated Strategies for Learning Questionnaire (MSLQ). *Educational and psychological measurement*, *53*(3), 801-813. https://doi.org/10.1177/0013164493053003024

Psychotherapy Networker. (2017). Play & language: The roots of literacy [Course description]. https://catalog.psychotherapynetworker.org/

Qi, X., Reynolds, B. L., & Bai, B. (2025). Self-regulated learning strategies and reading comprehension in Chinese (L1) and English (L2): A structural equation modeling study with

E-ISSN: 2980-9681

primary students in China. *Reading and Writing*, *38*(2), 345-368.

Rezaee Rezvan, S., Karashki, H., Hajivosoogh, N. S., & Torabi, S. S. (2022). Developing a based-on-play cognitive-behavioral educational package and determining its effectiveness in improving the language disorders and social adjustment in bilingual children. *Journal of Research and Health*, *12*(6), 377-388. https://doi.org/10.32598/JRH.12.6.1839.5

Rogers, C. R. (1961). *On becoming a person: A therapist's view of psychotherapy*. Houghton Mifflin.

Saputra, S. S. A., Sutikno, S., Kartolo, R., Asnawi, A., & Sutarini, S. (2025). Development of coaching learning techniques to overcome language errors of elementary students. *Jurnal Konseling dan Pendidikan*, *13*(1), 174-183. https://doi.org/10.29210/1142200

Stein-Rubin, C., & Adler, B. T. (2024). *Counseling in communication disorders: Facilitating the therapeutic relationship (1st ed.)*. Routledge.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

Yazdani, M., & Sadeghi, K. (2022). The effects of digitally self-regulated and guided discovery learning instructions on Iranian EFL learners' vocabulary acquisition. *Computer-Assisted Language Learning*, *35*(7), 1456-1480.

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