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Exploring Self-Regulated Learning Strategies Employed by Visually Impaired Secondary Students in EFL Writing Contexts

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Abstract

This study investigates the self-regulated learning (SRL) strategies employed by visually impaired secondary students in special education institutes within English as a Foreign Language (EFL) writing contexts. Drawing on Pintrich's (2004) SRL model, the research explores nine key SRL strategies, including Text Processing, Course Memory, Motivational Self-Talk, and Emotional Control, to understand how these learners navigate the complexities of EFL writing. A quantitative research design was adopted, utilizing the Writing Strategies for Self-Regulated Learning Questionnaire (WSSRLQ) and a writing test to collect data from 110 visually impaired students in Punjab, Pakistan. The analysis, conducted using SPSS, revealed Motivational Self-Talk and Course Memory as the most frequently employed strategies, highlighting their critical role in fostering resilience and compensating for sensory limitations. Conversely, Emotional Control and collaborative strategies like Peer Learning showed limited use, indicating areas for targeted interventions. These findings emphasize the importance of memory-based and motivational strategies while underscoring the need for stress management and accessible collaborative approaches tailored to special education settings. The study contributes to the growing body of

SRL research by addressing the unique needs of visually impaired learners in special education contexts and offers actionable insights for educators and policymakers.

Keywords: *Self-regulated learning strategies, visually impaired students, secondary level, EFL, writing, proficiency, adaptive strategies, Pakistan.*

Introduction

Writing is a fundamental skill in English as a Foreign Language (EFL) learning, critical for academic achievement and effective communication (Zimmerman & Risemberg, 1997; Csizér & Tankó, 2017). For visually impaired learners, mastering this skill presents unique challenges. Limited access to accessible resources such as Braille, audiobooks, and assistive technologies, coupled with inadequately trained educators, significantly hinders their ability to develop writing proficiency (UNESCO, 2017; Ali & Hameed, 2015). These barriers are further exacerbated by societal misconceptions, which can lead to reduced confidence and motivation, ultimately impacting their academic and professional trajectories (Sacks, 2017; Brodwin, 2016).

To overcome these challenges, empowering learners with strategies that enable them to independently regulate their writing processes is essential. Self-Regulated Learning (SRL) strategies provide such a framework by equipping students with tools to plan, monitor, and reflect on their writing tasks (Zimmerman, 2002; Pintrich, 2004). These strategies foster autonomy and resilience, enabling learners to address the complexities of EFL writing, which requires the integration of cognitive, metacognitive, and motivational dimensions (Teng & Zhang, 2018).

While SRL strategies have been globally recognized for their effectiveness in improving writing proficiency, research on their application among visually impaired learners in EFL contexts remains scarce. This is particularly true in developing countries like Pakistan, where special

education settings face systemic barriers, including limited resources and cultural misconceptions about disability (UNESCO, 2017; Khan, 2015). Understanding how visually impaired learners in these environments adopt and adapt SRL strategies can provide valuable insights for educators and policymakers.

This study investigates the SRL strategies employed by visually impaired secondary students in special education institutes across Punjab, Pakistan, in EFL writing contexts. By focusing on strategies such as text processing, goal-oriented monitoring, motivational self-talk, and emotional control, the research aims to inform the development of tailored educational interventions that enhance writing outcomes for visually impaired learners.

Research Question:

1. What self-regulated learning (SRL) strategies are employed by visually impaired secondary students in special educational institutes within EFL writing contexts?

Review of Literature

Self-regulated learning (SRL) has gained prominence in educational research for its potential to foster autonomy, motivation, and reflective practices among learners. Rooted in social-cognitive theory, SRL is conceptualized as a cyclical process involving planning, monitoring, and reflection, enabling learners to take an active role in their learning (Zimmerman, 2000). Expanding on this foundational model, Pintrich (2004) integrated cognitive, motivational, and contextual dimensions into SRL, emphasizing its multidimensional nature and its ability to promote lifelong learning. The paradigm shift from teacher-centered to learner-centered education has established SRL as a cornerstone of effective pedagogical practices (Schunk & Greene, 2018; Alraddadi, 2019).

In English as a Foreign Language (EFL) contexts, writing is particularly challenging, as it requires the integration of linguistic, cognitive, and metacognitive skills (Hayes & Flower, 1980; Graham, 2007). SRL strategies, such as goal setting, self-monitoring, and self-reflection, provide learners with tools to navigate these complexities and enhance their writing proficiency (Zimmerman & Risemberg, 1997; Teng, 2022). Additionally, Oxford's (2011) taxonomy categorizes SRL strategies into cognitive, affective, and sociocultural-interactive domains, highlighting their utility in fostering independent and adaptive learning behaviors.

While much of the research on SRL has focused on inclusive education settings, special education institutes provide a distinctive context for exploring its application. For visually impaired learners, the reliance on auditory and tactile modalities necessitates adaptations to traditional SRL strategies. Studies have shown that strategies like motivational self-talk and course memory are particularly effective for visually impaired learners, fostering resilience and task engagement (Boekaerts & Corno, 2005; Асперов, 2021). Memory-based strategies are especially critical, as visually impaired students often rely on repetition, summarization, and mnemonic devices to compensate for sensory limitations (Brodwin, 2016). These strategies align well with auditory strengths and help bridge gaps created by inaccessible visual resources.

However, the relationship between SRL strategies and their effectiveness is not linear. Research by Cai and Kunnan (2019) highlights this nuanced dynamic through the "Island Ridge Curve" metaphor, illustrating how SRL strategies' benefits may fluctuate based on contextual factors and individual learner profiles. Profiles of SRL learners, categorized as high, medium, and low users, further emphasize the importance of tailoring interventions to meet individual needs (Chen et al., 2022; Karlen, 2016).

Research Gap

Despite its potential, the application of SRL strategies among visually impaired learners in EFL contexts remains underexplored, particularly in developing countries like Pakistan. Systemic barriers, including limited access to assistive technologies, inadequately trained educators, and cultural misconceptions about disability, exacerbate the challenges faced by these learners (UNESCO, 2017; Khan, 2015). Additionally, traditional teaching methods, such as the Grammar Translation Method (GTM), often neglect the strengths of visually impaired learners, failing to incorporate adaptive and inclusive practices like task analysis, goal setting, and reflective learning (Teng & Zhang, 2020; Andrade & Evans, 2013).

Most existing research focuses on inclusive education settings, overlooking the unique challenges faced by learners in specialized environments such as special education institutes (Ali & Hameed, 2015; UNESCO, 2017). The distinctive nature of special education settings, which cater specifically to learners with disabilities, requires a deeper understanding of how SRL strategies are adopted and adapted in these contexts. This study addresses these gaps by examining the SRL strategies employed by visually impaired secondary students in special education institutes across Punjab, Pakistan, offering insights into the patterns of strategy use and the contextual factors influencing their adoption.

Research Design and Methodology

This study employs a quantitative research design to investigate the self-regulated learning (SRL) strategies utilized by visually impaired secondary students in EFL writing contexts. Guided by Pintrich's (2004) SRL model, the research explores nine key SRL strategies—text processing, course memory, idea planning, goal-oriented monitoring, peer learning, feedback handling, interest enhancement, motivational self-talk, and emotional control. These strategies were selected to

provide a comprehensive framework for understanding how learners regulate their writing processes within the specialized setting of special education institutes.

The study was conducted with 110 visually impaired students enrolled in Grades 9 and 10 across Punjab, Pakistan. Participants were selected through purposive and convenience sampling to ensure their engagement in EFL writing tasks and representation of the targeted demographic. Ethical protocols were adhered to, including securing permissions from institutional authorities and guardians, while ensuring voluntary participation.

Data collection was facilitated through two instruments. The Writing Strategies for Self-Regulated Learning Questionnaire (WSSRLQ), adapted from Teng (2022), was employed to measure the frequency and consistency of SRL strategy use. The questionnaire was modified into Braille and audio formats to accommodate the needs of visually impaired students. Additionally, participants completed a 200-word argumentative writing task on the topic *"The Influence of Social Media on Communication."* The writing task was evaluated using an analytical rubric adapted from Jacobs et al. (1981), assessing aspects such as content, organization, vocabulary, language use, and mechanics. This dual approach—combining self-reported data with performance-based measures—provided a robust understanding of SRL strategy application.

The data collection process was meticulously planned to ensure accessibility and inclusivity. Research assistants were trained to administer the instruments effectively, and the data collection environments were structured to minimize distractions while catering to the participants' needs. Accommodations such as transcription services and distraction-free settings were provided to facilitate equitable participation.

SPSS was used to analyze the collected data, focusing on both descriptive and inferential statistics. Descriptive statistics summarized demographic trends and patterns of SRL strategy use, while inferential analyses, including Pearson's correlation, explored the relationships between SRL strategies and writing outcomes. This systematic approach allowed for a detailed exploration of how visually impaired learners in special education institutes adopt and apply SRL strategies in their writing practices

Data Analysis

This section presents the findings derived from the analysis of self-regulated learning (SRL) strategies employed by visually impaired secondary students in EFL writing contexts. The data were collected through the Writing Strategies for Self-Regulated Learning Questionnaire (WSSRLQ) and a writing test designed to measure strategy implementation in practice. SPSS software was used for descriptive and inferential statistical analyses, providing insights into SRL strategy use patterns among participants.

Descriptive Statistics

Descriptive statistics summarize participant demographics and the utilization of SRL strategies. The sample consisted of 110 visually impaired secondary students across Grades 9 and 10 in special education institutes in Punjab, Pakistan.

Table 1: Descriptive Statistics of Participants

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Gender of Students	110	1	2	1.3364	0.47463
Age of students	110	2	4	2.9909	0.72309
Academic level of students	110	1	2	1.9636	0.18805
English Writing Proficiency	110	1	3	1.8909	0.81663

Self-Regulated Strategies	110	135	224	167.08	15.57705

Table 1 displays descriptive statistics pertaining to the demographic and significant characteristics of the 110 participants. Coded on a scale from 1 (male) to 2 (female), the gender variable has a standard deviation of.47463 and a mean of 1.3364, suggesting a somewhat higher proportion of male participants. Participants' average age is 2.9909, with a standard deviation of.72309, indicating that they are generally older. Age is considered on a scale from 1 to 4.

Table 2: Descriptive Statistics of SRL Strategies

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Text Processing	110	10	32	23.736	4.79043
Course Memory	110	4	20	12.4	3.53021
Idea Planning	110	4	19	11.591	3.1776
Goal-oriented Monitoring	110	15	35	24.264	4.53058
Peer learning	110	4	56	12.709	5.5112
Feedback handling	110	6	49	16.673	5.45559
Interest enhancement	110	7	29	16.236	4.01357
Motivational self-talk	110	19	55	37.2	6.69903
Emotional control	110	3	21	12.273	3.74389

There is variation in the self-regulated learning (SRL) strategies scores across the 110 individuals, according to the descriptive statistics. With scores ranging from 10 to 32, text processing has a mean of 23.74, indicating moderate utilization among students. The mean values of **Course Memory** and Idea Planning are 12.40 and 11.59, respectively, indicating comparable levels of moderate strategy utilization. The higher

mean (24.26) for **goal-oriented monitoring** indicates that students monitor their learning objectives more frequently. Overall, the findings show that students use SRL methods in a variety of ways.

Table 1: Descriptive statistics of SRL strategies by gender

Gender of Students		N	Minimum	Maximum	Mean	Std. Deviation
Male	Text Processing	73	13.00	32.00	23.8219	4.66769
	Course Memory	73	5.00	20.00	12.2877	3.75085
	Idea Planning	73	4.00	19.00	11.6164	3.30669
	Goal-oriented Monitoring	73	15.00	35.00	24.2055	4.57942
	Peer learning	73	4.00	56.00	12.8493	6.23982
	Feedback handling	73	6.00	49.00	16.9178	5.82083
	Interest enhancement	73	7.00	29.00	16.6301	4.01216
	Motivational self-talk	73	22.00	52.00	37.3836	6.65338
	Emotional control	73	3.00	21.00	12.5342	3.75308
Female	Text Processing	37	10.00	32.00	23.5676	5.08560
	Course Memory	37	4.00	17.00	12.6216	3.08537
	Idea Planning	37	6.00	17.00	11.5405	2.94953
	Goal-oriented Monitoring	37	17.00	34.00	24.3784	4.49290
	Peer learning	37	6.00	21.00	12.4324	3.73824
	Feedback handling	37	8.00	23.00	16.1892	4.68946
	Interest enhancement	37	7.00	25.00	15.4595	3.95527
	Motivational self-talk	37	19.00	55.00	36.8378	6.86583
	Emotional control	37	3.00	21.00	11.7568	3.72235

When male and female students' self-regulated learning strategies were compared, the results show that males (N = 73) scored lower in emotional control (M = 12.53, SD = 3.75) and higher in

Motivational Self-Talk (M = 37.38, SD = 6.65). Additionally, the mean scores for motivational self-talk (M = 36.84, SD = 6.87) and **Emotional Control** (M = 11.76, SD = 3.72) were highest and lowest, respectively, among the female group (N = 37). While the mean scores for each gender were comparable, men differed more from girls in terms of peer learning and handling feedback.

Table 2: Descriptive statistics of SRL strategies by year levels

Academic level of students		N	Minimum	Maximum	Mean	Std. Deviation
9th	Text Processing	4	18.00	25.00	21.5000	3.10913
	Course Memory	4	12.00	18.00	14.7500	2.75379
	Idea Planning	4	9.00	14.00	11.7500	2.21736
	Goal-oriented Monitoring	4	18.00	23.00	21.7500	2.50000
	Peer learning	4	10.00	20.00	14.0000	4.32049
	Feedback handling	4	12.00	23.00	16.7500	4.85627
	Interest enhancement	4	13.00	22.00	16.5000	4.04145
	Motivational self-talk	4	37.00	50.00	42.2500	5.56028
	Emotional control	4	8.00	15.00	11.2500	3.77492
10th	Text Processing	106	10.00	32.00	23.8208	4.83203
	Course Memory	106	4.00	20.00	12.3113	3.53584
	Idea Planning	106	4.00	19.00	11.5849	3.21564
	Goal-oriented Monitoring	106	15.00	35.00	24.3585	4.56944
	Peer learning	106	4.00	56.00	12.6604	5.56158
	Feedback handling	106	6.00	49.00	16.6698	5.49757
	Interest enhancement	106	7.00	29.00	16.2264	4.03150
	Motivational self-talk	106	19.00	55.00	37.0094	6.68544
	Emotional control	106	3.00	21.00	12.3113	3.75528

The table shows the use of self-regulated learning techniques by students in grades 9 and 10. Four ninth-graders participated in the data collection; the mean score for motivating self-talk was the highest (M = 42.25, SD = 5.56) and the lowest (M = 11.25, SD = 3.77) for emotional regulation. Based on a larger sample of 106 students, goal-oriented monitoring had the greatest mean score

for 10th graders (M = 24.36, SD = 4.57), while emotional control had the lowest (M = 12.31, SD = 3.76). Overall, there were differences in the diversity of students' tactics used across grades; students in the tenth grade showed more variation in their management of feedback and peer learning.

Writing Test Results

Participants were asked to write a 200-word argumentative essay on *"The Influence of Social Media on Communication."* Essays were evaluated using an analytical rubric adapted from Jacobs et al. (1981), which assessed dimensions such as content, organization, vocabulary, language use, and mechanics. These evaluations provided additional insights into how participants applied SRL strategies in real writing contexts. The integration of writing test results with questionnaire data allowed for a more comprehensive understanding of SRL strategy adoption.

Findings and Discussion

This section interprets the findings of the study, exploring how visually impaired secondary students in special education institutes utilize self-regulated learning (SRL) strategies in EFL writing contexts. The results are contextualized within the theoretical framework of SRL and relevant literature, providing insights into patterns of strategy use and their implications for education.

The analysis revealed significant variations in the use of SRL strategies, highlighting **Motivational Self-Talk** as the most frequently employed approach by participants (M = 36.9, SD = 6.8). This finding suggests that students rely heavily on internal motivators to maintain focus and navigate the challenges of EFL writing. This aligns with Boscolo and Hidi's (2007) assertion that

motivational regulation plays a crucial role in overcoming barriers to learning, particularly for individuals facing unique challenges, such as visual impairments. Despite its prevalence, reliance on motivational strategies alone may not suffice to address the broader complexities of writing tasks.

On the other hand, **Emotional Control** was the least utilized strategy (M = 12.3, SD = 3.7), reflecting persistent struggles with stress and anxiety during writing tasks. Such findings are consistent with Khan et al. (2019), who identified emotional regulation as a major hurdle for visually impaired learners. The low usage of emotional regulation strategies suggests a need for interventions that equip students with tools to manage their stress effectively. Programs such as stress management workshops and resilience training could significantly enhance learners' capacity to cope with writing-related challenges.

The writing test results provided further insights into how SRL strategies were applied in practice. Students demonstrated moderate proficiency in organizing content, using vocabulary effectively, and adhering to grammatical conventions. Participants who frequently utilized **Course Memory** strategies, such as repetition and mnemonic aids, displayed higher proficiency in language use and task management. This finding corroborates Brodwin's (2016) emphasis on memory-based strategies as compensatory tools for learners with sensory impairments. Given their reliance on auditory reinforcement and tactile cues, visually impaired students benefit greatly from memory-focused interventions integrated into instructional practices.

Distinct patterns in strategy use emerged between students in Grades 9 and 10. Tenth-grade students exhibited higher variability and slightly greater adoption of strategies like **Goal-Oriented Monitoring** (M = 24.4, SD = 4.5) and **Text Processing** (M = 23.8, SD = 4.8). This suggests that

as students progress academically, they expand their repertoire of SRL strategies, possibly due to increased exposure to writing tasks and feedback. However, the consistently low scores for Emotional Control across both grades highlight systemic challenges that require sustained interventions.

While strategies such as **Motivational Self-Talk** and **Course Memory** were widely utilized, others, including **Peer Learning** and **Feedback Handling**, were less frequently employed. This may reflect a lack of tailored resources or collaborative frameworks within special education institutes. Collaborative strategies, such as peer discussions and feedback sessions, could be adapted to suit the auditory and tactile strengths of visually impaired learners, making these approaches more accessible and effective. Additionally, structured guidance in goal-setting and monitoring can help students better plan and execute writing tasks, minimizing frustration and fostering achievement.

These findings reinforce Zimmerman's (2002) SRL model, which emphasizes the interplay of cognitive, motivational, and emotional dimensions in self-regulated learning. The prominent use of motivational and memory-based strategies aligns with Teng's (2022) study, which highlights their effectiveness for learners with unique needs. However, the specific focus on visually impaired students in special education institutes offers a novel perspective, addressing gaps in broader SRL research and emphasizing the need for tailored interventions in special education settings.

The implications of these findings extend to educators and policymakers, emphasizing the importance of designing inclusive teaching practices. Memory-based activities, motivational workshops, and stress management programs should be integrated into curricula to address the specific needs of visually impaired learners. Furthermore, adapting peer learning and feedback

mechanisms to auditory and tactile modalities can enhance their accessibility and relevance. By aligning instructional strategies with the strengths of visually impaired students, educators can foster greater engagement and improve writing outcomes in EFL contexts.

Conclusion

This study investigated the self-regulated learning (SRL) strategies employed by visually impaired secondary students in special education institutes within EFL writing contexts, guided by Pintrich's (2004) SRL model. The findings identified Motivational Self-Talk and Course Memory as the most frequently used strategies, emphasizing their importance in fostering resilience and compensating for sensory limitations. However, challenges such as limited Emotional Control and minimal engagement with collaborative strategies like Peer Learning and Feedback Handling highlight areas requiring targeted interventions. These results underscore the need for tailored educational practices, including memory-focused activities, stress management programs, and adaptations to collaborative and feedback mechanisms that align with non-visual modalities. By addressing a significant gap in research, this study contributes to understanding SRL strategies in special education contexts, offering practical insights for developing inclusive teaching practices to support the academic and personal growth of visually impaired learners. The findings provide a foundation for future research and policy initiatives aimed at ensuring equitable educational opportunities for this population.

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