The Effects of Self-Regulated Strategy Development on Writing Skill and Self-Regulated Learning of Thai High School Students

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Abstract
This study was conducted to examine the effects of self-regulated strategy development, an intervention designed to teach writing skills through six steps and four self-regulation skills, on academic English writing skills and self-regulated learning. Additionally, the aim is also to investigate attitudes towards the instruction. Mastering the skills of writing is a challenging task since it requires several integrated skills. There exist several complex difficulties in, for example, creating content, organizing structure, applying writing mechanics, and completing the revision process. Thus, the essential factor is writing instruction which helps learners improve their writing skills. The participants were eleven pre-intermediate students at a senior high school in Thailand who were explicitly taught by self-regulated strategy development instruction in a process consisting of six recursive stages and four self-regulation skill stages. To gather quantitative data, a pretest and posttest were employed. Moreover, to obtain qualitative data regarding the students’ attitudes toward the instruction, a semi-structured interview was used. The findings revealed that the academic writing ability and self-regulation skills of Thai high school students can be enhanced by self-regulated strategy development and that students show positive attitudes towards this type of instruction.

Keywords: Attitudes, self-regulated strategy development, self-regulated learning, Thai students, writing skill

Introduction

Writing skill is challenging to master in the educational sphere. Recently, the significance of writing has greatly surpassed that of other English abilities (Grabe & Kaplan, 1996). For example, school assignments require creating a written piece that serves as a crucial instrument for the development of both intellectual and social aspects (Bruning & Horn, 2000). Starting from the upper elementary grades and beyond, writing serves as an invaluable means to showcase the knowledge that students have attained (Graham, 2006; Prior, 2006). Nonetheless, attaining proficiency in writing poses many difficulties since it is not a skill that can be naturally and effortlessly acquired.

In a Second Language (L2), writing necessitates the mastery of numerous interconnected skills, including the ability to formulate, organize, and present information. Therefore, obtaining success in writing is widely acknowledged as a daunting task (Zimmerman & Bandura, 1994; Hashemian & Heidari, 2013). Another aspect to consider is that writing comprises essential components that deserve recognition. Learners should be aware of the norms of writing, encompassing elements such as grammar, vocabulary, and punctuation, as well as analyzing the target audience (Baker et al., 2009). While there are students who can critically conclude from their acquired knowledge, some of them encounter difficulties when it comes to synthesizing information from a source into coherent written language. As a result, the development of English writing skills poses a challenging situation and constitutes a significant area of research interest.

Following this, self-regulation is one of the prominent models that hold a crucial role in enhancing the quality of writing. The term self-regulation is conceptualized as a multidimensional process in which a learner endeavors to regulate cognition, motivation, behavior, and the learning environment to achieve improved outcomes in terms of learning and performance (Bandura, 1986; Zimmerman, 2000; Dinsmore, 2008). Numerous studies in the literature have demonstrated that self-regulation is a fruitful strategy to attain proficiency in various domains, including the process of language acquisition (Graham & Harris, 1994; Zimmerman & Risemberg, 1997). Regarding writing, self-regulation also offers significant benefits.

Even individuals who have been consistently studying English for a significant duration often experience stress and discomfort when tasked with writing assignments. Furthermore, attaining mastery of writing skills necessitates a substantial level of self-regulation because individuals need to independently plan (Zimmerman & Riesemberg, 1997). Therefore, these assumptions indicate that self-regulation significantly affects the writing process. Moreover, it is widely recognized that writing is a challenging task due to the essential requirement of self-regulation, integrated skills, and focused attention to effectively control and manage environmental factors and processes (Kellogg, 1987; Ransdell & Levy, 1996; Scardamalia & Bereiter, 1986).

The teaching method called Self-Regulated Strategy Development (SRSD) aims to improve students’ learning, application, and adoption of writing strategies effectively and efficiently. SRSD is a scientifically validated model that assists students in writing endeavors using cognition and self-regulation procedures (Case et al., 1992). The instruction comprises three operations:

(a) explicitly teaching using six progressive steps of instruction;
(b) four self-regulation techniques and;
(c) a positive development of students’ attitudes (Harris et al., 2003; Santangelo et
Numerous extensive studies have been conducted on self-regulation by scholars, including researchers such as Harris et al. (1997) and Harris et al. (2006), showing that self-regulation processes positively contribute to the achievement of writing skills. However, little research has been studied to examine each self-regulation procedure within the SRSD instruction, specifically in the context of Thailand, particularly at the high school level. Thus, this study adds to the existing body of literature in this area by examining the effectiveness of self-regulation strategies in enhancing students’ writing skills and self-regulation. Consequently, to fill this research gap, the present study seeks to explore the effects of SRSD instruction on academic English writing skills and the attitudes of high school students in Thailand toward the instruction. The study intends to look into the following two research questions:

1. What effects does self-regulated strategy development instruction have on improving the academic English writing skills of high school students in Thailand?

2. What are the attitudes of high school students in Thailand toward self-regulated strategy development instruction in learning writing?

Literature Review

This section provides a comprehensive review of writing skills, the SRSD and its influence on writing skills and previous studies conducted in this field.

Writing Skill

Writing is defined as a sequence or arrangement of words in a written format to effectively convey intended meanings (Harmer, 2004). According to the findings reported by Grabe and Kaplan (1996), writing is regarded as a set of skills that require continuous development. These skills can be learned through experiences and deliberate practice (p.6). Given the growing significance of writing in students' lives, they are frequently tasked with composing various forms of written work. Initially, this may involve relatively straightforward content, but it progressively evolves into more intricate and sophisticated writing tasks. Unfortunately, the majority of students encounter notable challenges in acquiring, utilizing, and managing the complexities of the writing process. Students encounter common challenges when they need to write. For instance, they lack an adequate understanding of writing, choose and use an inefficient writing approach, lack prior planning, and struggle with creating or formulating ideas (Harris & Graham, 1996; Graham & Harris, 2005). For these reasons, the importance of effective writing pedagogy is further emphasized. Teachers and researchers have primarily focused on writing instruction to find the most efficient methods of teaching that foster the improvement of learners’ writing ability.

Self-Regulated Strategy Development (SRSD) and Its Influence on Writing

There has been a considerable of research dedicated to exploring the theory of self-regulated learning, resulting in significant diversity in its diversity and understanding. Implementing these theories has exerted a noteworthy impact on research and practice across various domains and contexts, especially within the field of education (Boekaerts et al., 2000). This can be cultivated through the implementation of an educational framework known as Self-Regulated Strategy Development (SRSD) where students are given explicit instruction to learn methods (Harris & Graham, 1996). SRSD has been scientifically validated by more than 100 studies as a practical
approach to teaching writing, consistently demonstrating superior outcomes compared to non-SRSD instruction (Graham et al., 2013). The main emphasis is to offer impactful strategies for effectively managing the writing process, achieved through six stages and self-regulation practices. As pointed out by Saddler (2006), the implementation of self-regulation practices holds significance in facilitating learning and can be developed through instructional methods.

Although various approaches exist for strategy instruction, SRSD stands apart from typical instructional methods in this regard. First, the SRSD model assists students in their writing development by teaching them writing strategies and imparting knowledge of both specific and general writing genres; as a result, students demonstrate a high level of engagement in writing (Harris & Graham, 1992). Second, the instruction not only encompasses writing strategies but also incorporates elements of self-regulation procedures that are advantageous for writing, promoting students’ independence and proficiency as writers. Numerous research studies have indicated that incorporating self-regulatory practices into teaching is highly effective in enhancing the quality of writing (Brunstein & Glaser, 2011; Harris et al., 2006; Zumbrunn & Bruning, 2013).

To conclude, the SRSD instructional model stands out as one of the most effective interventions that significantly contribute to enhancing writing quality, knowledge of writing, utilization of strategies, and students' perceptions. Throughout the instruction, students also acquire an understanding of the components of self-regulatory processes for writing, thereby offering them more excellent prospects to cultivate independent learning skills.

**Previous Studies on SRSD and Writing**

Presented below is a summary of past studies conducted in various contexts that explore the SRSD model in writing instruction.

In a research investigation carried out by Saddler et al. (2004), the efficacy of the SRSD on writing performance was examined. The variables that were measured as outcomes in the study were personal narrative and story writing. The study involved six participants who encountered challenges in writing. They were taught through SRSD instruction to plan and write a story. The findings revealed a quantitative improvement in the student’s writing proficiency, as evidenced by their ability to independently compose both stories and personal narratives. Kindle and Butterfield (2017) also conducted action research to assess the effectiveness of SRSD in enhancing writing skills. Data was collected through a combination of quantitative and qualitative methods, involving students' essays, assessments by both students and teachers, and student self-reflection. This study was conducted within eight weeks in a university classroom for ESL located in Cameroon, West Africa. The project was specifically designed to focus on persuasive academic writing. The results revealed a noticeable enhancement in essay writing skills. Additionally, the students' self-reflections indicated a sense of personal improvement in writing throughout the instructional unit.

The previous studies conducted on SRSD and writing in an EFL context exhibited similarities to those undertaken in global contexts, regarding the emphasis of research and the tools employed for research. Fahim and Rajabi (2015) aimed to study to assess the efficacy of SRSD on the persuasive genre, while also examining the motivation of EFL learners towards its implementation. The study involved a group of 30 Persian pre-intermediate writers as the participants. The results showcased scores obtained from various assessments, indicating that this teaching model resulted in the enhancement of writing proficiency. Moreover, the results obtained from the data analysis revealed a significant rise in the participants’ motivation with respect to
foreign language writing.

A study by Yin and Chinokul (2018) researched a group of ten eleventh-grade students in Cambodia. The purpose was to investigate the effects of SRSD on English writing instruction and to explore the perceptions on the matter. The research questions were addressed through a voluntary selection process. Two research instruments were implemented: a writing test and a semi-structured interview. The results found that participants received higher scores on the posttest (M=17.2) compared to the pretest (M=13.1). Their perceptions of the instruction were expressed positively.

At a university in Thailand’s northeast, Weerathai and Arya (2020) investigated the effects of self-monitoring which is one of the self-regulation components in SRSD instruction and peer feedback practices on English essay writing. The instruments consisted of pre- and post-expository writing tests and student logs. The results indicated that self-monitoring and peer feedback techniques were effective methods that ought to be taught to students at all levels.

Naibaho (2021) conducted action research to determine if a self-regulated strategy development method is adequate to increase students’ narrative writing at Teruna Muda School. The results demonstrated that there was a 62% rise in students' writing scores.

To date, limited research has been conducted to study the relationship between the SRSD approach and writing skills in the context of Thailand, especially at the high school level. Thus, to bridge the gap in the field, this study aims to examine the effects of SRSD on the academic English writing proficiency of Thai high school students while also exploring their attitudes towards this instructional approach.

Methods

In accordance with the research objectives, both quantitative and qualitative data are required to validate the findings. This section presents participants, research instruments and procedures, and data analysis of the study.

Participants

This study involved 11 pre-intermediate senior high school students in Thailand who were selected from a school that specializes in nurturing talented students in science and mathematics. The participants were selected via convenience sampling. All students in this group were assigned to write a narrative essay as part of their coursework in the academic year 2021.

Research Instruments

This study utilized two research instruments: writing tests consisting of pretest and posttest measures, and a semi-structured interview.

To assess if there is any statistical difference in the writing test scores, the writing assessments were conducted as both a pretest and posttest before and after the instructional period. The students were instructed to compose a narrative essay consisting of five paragraphs. To ensure relevance to the context, the rubric for evaluating the essays was adapted and developed accordingly; therefore, the scale used ranged from one (the lowest) to a maximum score of five (the highest). The scores are categorized into five areas, which include organization, development, cohesion, structure, and mechanics.

The semi-structured interviews were used for the qualitative aspect. A total of six students, who met the predetermined criteria, voluntarily participated in this study and remained engaged
throughout the implementation process. They were chosen based on their writing test results, and they were willing to participate and give information.

**Research Procedures**
To answer the addressed research questions, the current research process involves the examination and discussion of three primary phases. The first phase commenced once the participants were assigned to the researcher’s group by the Department of Foreign Languages, with 11 students per class. At the start of the experimental period, they were instructed to complete a writing pretest to evaluate their English writing proficiency. In the next phase, the participants underwent the treatment, which involved receiving SRSD instruction aimed at enhancing their writing and self-regulation abilities. The treatment was conducted for eight weeks. In the final phase, the participants engaged in an interview with the researcher to express their perspectives and attitudes toward the instruction.

**Data Analysis**
The Wilcoxon signed-rank test was used to analyze the pretest and posttest results. The purpose of using this procedure was to compare the two sets of scores. It is also suitable for analyzing samples with fewer than 30 participants. As mentioned previously, the data from semi-structured interviews and in-class observations was analyzed qualitatively to gain a comprehensive understanding of the participants’ attitudes and to triangulate the results from writing tests. To explore the qualitative data and derive significant insights, it was submitted to content analysis.

**Results**
**Question One:**
In accordance with the initial research question, this analysis aimed to compare the differences in performance between the pretest and posttest results. Table one provides a comparison of the progress in academic writing skills between the pretest and posttest stages, as an outcome of the SRSD instruction. The distinction between the two sets of tests was examined. It is used to compare two paired groups. The Z value was $-2.936^b$ and the p-value (2-tailed) was .003, which was less than .01. This result suggests a statistically significant variation in writing proficiency following the intervention. In simple terms, it indicates that the students significantly improved their academic writing.

|   | Pretest and posttest results for academic writing skill |
|---|---|---|
| Posttest – Pretest |  |  |
| Negative Ranks | Mean Rank | Sum of Ranks |
| $^a$0 | .00 | .00 |
| Positive Ranks | $^b11$ | 6.00 | 66.00 |
| Ties | $^c0$ |  |
| Total | 11 |  |

**Test Statistics$^a$**

<table>
<thead>
<tr>
<th></th>
<th>Posttest - Pretest</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Z$</td>
<td>$-2.936^b$</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.003</td>
</tr>
</tbody>
</table>
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**p < 0.01

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

However, upon closer examination of the scores categorized by each element of assessment as shown in Table Two, it is seen that the highest average score in the posttest was attained in the domain of organization (\(\bar{X} = 4.00\)). Meanwhile, it is noteworthy that this part of the assessment also exhibited a standard deviation (S.D.) of 0.52, suggesting some variability in the scores. Nonetheless, when comparing each assessment component carefully, it is apparent that the lowest score for the posttest (after treatment) was 2.64 (\(\bar{X} = 2.64,\) S.D. = 0.50) for the mechanics assessment.

Table 2. Result between the pretest and posttest (Classified by each element of assessment)

<table>
<thead>
<tr>
<th>Element of assessment</th>
<th>Type of test</th>
<th>n</th>
<th>(\bar{X})</th>
<th>S.D.</th>
<th>Wilcoxon Signed Rank Test (Z)</th>
<th>p-Value Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Pre-test</td>
<td>11</td>
<td>1.94</td>
<td>0.95</td>
<td>-2.938</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td></td>
<td>4.00</td>
<td>0.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development</td>
<td>Pre-test</td>
<td>11</td>
<td>2.30</td>
<td>0.74</td>
<td>-2.938</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td></td>
<td>3.76</td>
<td>0.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohesion</td>
<td>Pre-test</td>
<td>11</td>
<td>2.24</td>
<td>0.72</td>
<td>-2.965</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td></td>
<td>3.48</td>
<td>0.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure</td>
<td>Pre-test</td>
<td>11</td>
<td>2.42</td>
<td>0.45</td>
<td>-2.598</td>
<td>.009</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td></td>
<td>3.03</td>
<td>0.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanics</td>
<td>Pre-test</td>
<td>11</td>
<td>2.06</td>
<td>0.49</td>
<td>-2.555</td>
<td>.011</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td></td>
<td>2.64</td>
<td>0.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Pre-test</td>
<td>11</td>
<td>10.97</td>
<td>2.73</td>
<td>-2.936</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td></td>
<td>16.91</td>
<td>2.39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Question Two:**

For the interview session, every participant was required to provide responses to five questions.

1) Have you ever faced any challenges in writing? If yes or no, could please talk about it?

The interview transcripts revealed that all of the interviewees encountered difficulties in writing. These challenges were categorized into five areas: organization, grammar, transcription, vocabulary, and content generation. Over 80% of the participants encountered difficulties with organization, as they found it challenging to arrange their ideas coherently and logically. Following closely behind are difficulties related to grammar.

2) Describe your feelings during studying the course (e.g., enjoyed, relaxed, terrified, anxious).

The statements indicated that initially, all participants experienced anxiety, albeit in various aspects. Two of them acknowledged writing as a challenging skill, but as the course progressed, they gradually became more at ease and less anxious.

3) Is it helpful for you to use the SRSD instruction in learning writing?

Every interviewee concurred that the utilization of the SRSD instruction in teaching writing proved to be highly beneficial. They acknowledged that this approach aided them in enhancing their English academic writing skills.

4) In your opinion, does SRSD instruction make you improve your writing skills? How?
All participants expressed that the implementation of the SRSD instruction had a notable impact in developing their academic writing skills, particularly in terms of improving organization. This instruction provided them with a method for structuring and arranging ideas effectively. They gained an understanding of how to engage readers by empathizing with their perspectives. Furthermore, recognizing the audience’s needs became crucial in their writing process, as it guided them in determining the appropriate information to present.

5) Is there anything else you would like to suggest?

Out of all the participants, one individual expressed a desire for increased involvement in group work activities.

Discussion

Question One:

The research results revealed a significant difference in writing achievement after the experimental treatment, with a statistical significance of .003. A noticeable contrast was observed when comparing the scores from the pretest and posttest, demonstrating a substantial enhancement in the student's writing after they received SRSD instruction, consisting of six iterative stages. This study aligns with the research conducted by Harris and Graham (1996), which found that the SRSD instructional approach aids students in developing writing proficiency and fostering mastery of cognitive processes. Furthermore, this study demonstrated alignment with the research studied by Fahim and Rajabi (2015), Yin and Chinokul (2018), Weerathai and Arya (2020), and Naibaho (2021). To illustrate, Fahim and Rajabi (2015) investigated the effects of SRSD on writing skills among 30 Persian pre-intermediate writers. In this particular study, the participants consisted of Thai pre-intermediate learners who were EFL learners and indicated that the implementation led to enhanced writing performance among EFL learners.

Upon analysis of each component of the assessment, including organization, development, cohesion, structure, and mechanics, it was observed that the first four elements showed significant improvement, whereas mechanics demonstrated only a slight enhancement when compared to the pretest. (pretest = \( \bar{x} = 2.06 \) and posttest = \( \bar{x} = 2.64 \)). This could be attributed to several factors. Firstly, the utilization of the PLAN+WRITE mnemonic strategy for essay writing aims to instruct students to plan, draft, and revise their written work. Additionally, this approach aims to provide and equip students with the essential knowledge and skills to facilitate these processes successfully (De LaPaz & Graham, 2002). However, mechanics had limited significance in this regard.

Question Two:

The results derived from conducting the semi-structured interview were consistent with the final primary objective of SRSD, as the participants displayed positive attitudes towards the instructional model employed for teaching English writing. The data obtained from the interviews also concurred with the findings obtained from writing test scores. Initially, concerning their writing abilities, students encountered challenges. However, after engaging with the instruction, they developed a heightened awareness of their writing skill. Participants highlighted the effectiveness of this strategy, which aided them in enhancing their writing development. These strategies proved instrumental in facilitating the organization of their written work and increasing their writing speed. Lastly, one participant specifically mentioned that the SRSD instruction helped them consider audience analysis during the writing process. Research conducted by Harris et al. (2010) as well as study by Graham and Harris (2016) aligns with the outcomes observed in the
present study. These studies similarly demonstrated that students' writing proficiency improved through thorough implementation of appropriate planning, drafting, and revising strategies. Students also expressed their sentiments regarding the English class, indicating that they had acquired confidence in writing in English and felt more at ease compared to their initial experience in the course. The current study provides insight into the potential of the instruction, emphasizing its significant role in enhancing the motivation of EFL learners. In particular, the findings revealed that the utilization of SRSD in writing instruction is highly likely to promote learners’ intrinsic motivation to write. This suggests that through self-regulated learning, interventions not only enhance academic performance but also strategically and effectively control behavior and sustain motivation (Dignath et al., 2008).

Conclusion
This study examines the effects of self-regulated strategy development and investigates the attitudes toward the instruction. As evidenced by the research findings, this approach has a beneficial impact. The findings demonstrate that the implementation of the SRSD instruction, along with the teaching of specific strategies, can improve writing proficiency, self-regulation skills, and positive attitudes of pre-intermediate high school students. Self-regulation strategies prove to be a valuable resource for novice writers like pre-intermediate students, as they aid in the development of their knowledge as well as experience, enabling them to effectively apply general and specific writing strategies to a specific genre in a foreign language.

Recommendation for Further Studies
The limitations of the current study provide implications for future research regarding the advancement of academic writing skills and self-regulation strategies. Firstly, further studies should include larger sample sizes to enhance generalizability. Secondly, a true experimental design should be conducted for a more rigorous investigation. By employing this design, researchers would be able to compare the data of the strategy instruction between the two groups. Thirdly, as emphasized by Harris et al. (2011), it is crucial to acknowledge that acquiring proficiency in the writing process is a time-consuming endeavor, requiring an extended duration for expertise to develop.

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