

## **Supporting Preschool Children's Early Writing with Self-Regulated Learning Strategies**

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### **Abstract**

Research suggests that early writing is crucial in the development of young children's literacy skills and links to their conventional literacy outcomes in elementary school and beyond. In order to enhance the will and the skills to express thoughts explicitly and effectively in early writing among preschool children, self-regulated learning (SRL) was suggested. This experimental study involved seventy-five preschool children, aged from five to six years old in Malaysia, aimed to investigate the effectiveness of SRL strategies on early writing performance. In this study, quantitative data collection was engaged and supported with qualitative data through interviews to obtain a deep insight of the findings results. Two-way repeated measure ANCOVA was employed and confirmed the effectiveness SRL intervention performance in early writing. In regression analyses, strategy such as planning and goal setting was confirmed as strong predictor for early writing performance. Data from the interview revealed that various SRL strategies were engaged by out-performing children from the experimental group and contributed to their early writing performance. The findings of this research provide a useful insight into early writing instructions in Malaysian context.

**Keywords:** preschool children, early writing performance, self-regulated learning strategies

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## **Introduction**

In Malaysia, all students are expected to learn of how to learn and how to take responsibilities in making their learning more constructive and successful (Ministry of Education, 2015, 2017). According to researchers, although early academic skills are important for school success, children's self-regulation abilities such as ability to follow instructions, focus on materials presented to them, and demonstrate self-control are important to predict their later academic achievement (McClelland, Acock, Piccinin, Rhea, & Stallings, 2013). Thus, preschool education in Malaysia also aims to prepare preschool children to continue their formal education with various competencies and skills as well as self-regulating skills (Ministry of Education, 2017). However, for many learners, these skills do not occur naturally or easily. Teaching practices and environment must be designed with intention to foster the development of self-regulated learners.

Numerous of research studies provide data that self-regulated learning (SRL) is crucial and highly prophetic of young learners' academic achievement and learning motivation (Anam & Stracke, 2016; Dent & Koenka, 2016; Pino-Pasternak, Basilio, & Whitebread, 2014). By engaging SRL, children learn how to take initiative in monitoring their learning strategies and place, evaluate their learning, and progress to perform better (Panadero, 2017). Characteristics of SRL which involve intrinsic motivation and autonomous learning help the learners to achieve their goals in any learning situation. Research suggests that children in their very young age can and do engage in activities to self-regulate their learning (Pino-Pasternak et al., 2014; Whitebread & Basilio, 2012). Nevertheless, most of the local researches in Malaysia focus on factors that are related to students' SRL which is not sufficient enough to provide better understanding about the principles of self-regulation generalizing across contexts such as age group, subjects, etc. (Ng, 2010). There is scarcity of evidence documenting the use of SRL strategies among younger children, aged from five to six years old in Malaysia. Based on the premise above, there is a need to explore the SRL strategies in supporting preschool children's learning.

## Literature Review

### *SRL and early writing*

SRL has been variously and commonly defined as an active and constructive learning process. SRL is a key competency that can and should be taught to children since their young age (Dignath, Buettner, & Langfeld, 2008). It is the foundation of a lifelong learning process that teaches learners to set their own goals and monitor and regulate control their thoughts, attitudes, and actions learning in a planned and orderly way to achieve learning goals (Zimmerman, 2013). Key processes of SRL, such as goal setting, self-efficacy, metacognitive monitoring, and effort and resource management, contribute to positive outcomes in academic achievement including writing (White & DiBenedetto, 2015; Zimmerman & Risemberg, 1997). SRL is developmental skill that is dependent upon individual and characteristics of environment (Zimmerman, 2000). This means learners can be at the differing levels of ability to self-regulate when they are introduced with proper instructions and environment. Writing as a complex demanding process, either to novice or to expert writers, will need more learning strategies to sustain learners' motivation in approaching and handling writing task. For example, young children can use SRL strategies to help them in planning, revising, constructing paragraph and sentence, and word processing (Hayes & Olinghouse, 2015). Employing SRL in early writing not only supports the writing skills, but also enhances motivational processes and supports long-term writing attitude.

According to Zimmerman (2008), motivation and self-efficacy of children will affect the ability of self-regulation, cognition, effectiveness, interest, and decision making, especially in the academic process. The beliefs that children hold about their abilities influence the amount of effort to put into a task, willingness to complete activities, and the ability to persist when facing difficulties. Through SRL, children learn how to plan, seek information and social help, and monitor their writing process and these skills will enable them to approach writing task more confidently. When children perceive positively towards their writing abilities, they might put more effort in their learning processes. Better performance can be resulting from greater effort. This reciprocal process is important in learning as it influences children's decision in determining how far they are willing to go and how hard they are willing or able to push themselves to optimize the chances of positive outcomes

(Bandura, 2012). However, it should be noted that this article does not focus on reporting self-efficacy specifically. Rather SRL strategies will be highlighted.

### ***Early writing in Malaysian preschools***

In Malaysian national preschool curriculum, early writing is not only related to mechanical or orthography skills but also is a complex cognitive process. While engaging in early writing, children have to make choices approximately the way to explicit their message, the way to arrange and print their marks on the page, and the way to denote sounds within the message (Ministry of Education, 2017). Unfortunately, in preschool classrooms, early writing opportunities are often disconnected from proper instruction, often treated as fine motor activity, and focused on mechanics and handwriting such as penmanship or forming letters rather than scaffolding on the function of writing (Gerde, Bingham, & Wasik, 2012; Hall, Simpson, Guo, & Wang, 2015; Ng & Yeo, 2014; Pelatti, Piasta, Justice, & O'Connell, 2014; Puranik, Al Otaiba, Sidler, & Greulich, 2014; Samah, Majzub, & Mahamod, 2015) and this brings to low achievement in writing. In the case of early writing instructions, there is a tendency of teaching form rather than the function of literacy in preschool classroom (Bingham, Quinn, & Gerde, 2017; Gerde, Bingham, & Pendergast, 2015; Ng & Yeo, 2014). To see the short term outcomes, many teachers use copying, drilling, and memorizing method in teaching writing (Samah et al., 2015). These teaching behaviors will eventually negatively affect the literacy development of young children. Therefore, SRL which composes of cognitive, meta-cognitive, and motivational regulation should be further studied and supported in order to enhance early writing acquisition (Bulut, 2017; Hutchinson, 2013; Schunk & Zimmerman, 2007).

## **Method**

This current study aimed to examine the effectiveness of SRL strategies in supporting six years old children's early writing performance in preschool context. Besides, the strong predictor of SRL strategies on early writing performance was determined in this study. The interview data were used to support the quantitative findings.

## **Study Design**

The current study employs a quasi-experimental design where the groups were randomly assigned to experimental and control groups. Natural setting to carry out the study was the priority consideration for this current study. The experimental group was instructed in early writing by integrating SRL intervention which lasted approximately four months. Control group was instructed by using the traditional approach. Participants from experimental group, who gained great improvement in early writing performance, were interviewed to support the quantitative findings and to gain deeper understanding and insight about the use of SRL strategies among preschool children.

## **Participants**

This study sample consisted of seventy-five preschool children, aged six years old who enrolled in two public preschools of Selangor, Malaysia. There were 37 samples in experimental group and 38 in control group. All demographic variables were analysed and compared between experimental and control groups using independent t-test and chi-square test. Results indicated that data was normally distributed. Prior to data analysis, all scales and subscales in early writing performance and use of SRL strategies were tested between two schools to identify the homogeneity of the both schools. Results indicated that both schools were significantly different in all variables, with  $p < 0.05$ . Therefore, the factor of "school" was considered as a covariate and removed from the all the results performed in this study to reduce biasness.

## **Instruments**

Self-regulated Strategies for Early Writing-Observation Form (SRSEWOF) was used as the data collection tool. Initially, SRSEWOF was adapted from the instrument developed by Vesile Yildiz Demirtaş (Demirtaş, 2013) and closely tied to early writing for preschool children. Nevertheless, certain adjustment was done to the tools according to the conceptual framework of the current study. It was reorganized on the basis of the theories propounded by Zimmerman and Schunk's (2012) study, important literature review in SRL and early

writing. A pool of twenty-six statements across five dimensions representing various SRL strategies in early writing was finalized for this current study. Face and content validation of this instrument was done by related area's experts and practitioners. The overall Cronbach's reliability co-efficiency was found at 0.966.

#### ***Early Writing Performance Scale (EWPS)***

EWPS was developed based on Learning Standards and Performance Standards in National Preschool Standard-based Curriculum and Assessment Document (Ministry of Education, 2017) and validated by three experts in curriculum development and early literacy in early childhood education in Malaysia. In this study, early writing performance refers to children's ability in generate ideas, acquisition of procedural knowledge, such as mechanic writing skills (legible hand-writing, capitalization, punctuations, and word spacing), using invented spelling, conventional writing, and transcription skills. Besides, overall early writing quality was assessed according to children's ability and creativity in composing and elaborating their ideas. Children were encouraged to use drawing, signs and symbols, and invented spelling or conventional spelling in writing. The scoring for early writing performance was done by two independent raters, who are lecturers of early literacy and excellent preschool teacher of public preschool in Malaysia. First of all, all the pre- and post-test scripts were graded according to their overall quality by refereeing to anchor-papers that represented quality categories ranging from Low (0-1), Moderate (2-3), and High (4-5). The scoring for mechanical writing skills and creativity in expressing ideas were based on 5-point Likert's scale. Total marks range from 0 to 29 for early writing performance.

#### ***Intervention programme***

In Malaysia, early literacy for Malay, English, and Chinese languages was taught in specific allocation of time and in integrated learning activities. Therefore, in this study, SRL intervention was developed by integrating the SRL strategies into early writing sessions for preschool children in Malaysia. The transfer of SRL strategies to preschool children was adapted to the specific requirements of five to six years old children's learning abilities. All the SRL strategies in the intervention programme were arranged into ten units and closely tied to early writing process. Ten detailed lesson plans based on the theoretical

framework of the study and theories were developed together with preschool expert teachers, teaching and learning materials were prepared, and instructions on how to carry intervention and assessment were provided for participant teachers in this study. Structure and contents of the SRL intervention for children are shown in Table 1 below.

Table 1. *Overview of the Self-Regulated Learning Intervention*

Unit	SRL Strategies	Training Goals	Tools
Introduction	Knowledge and Importance of SRL Strategies	Children aware and understand SRL strategies.	Story Book / PPT/ SRL Reminder Chart
Goal Setting	Goal Setting	Children understand the importance of realistic goal-setting. Children learn how to set individual goals.	Goal Score Worksheet
Plan My Writing	Planning (I)	Children learn how to use drawing to generate ideas.	Drawing, Stick-On Notes
Plan My Writing	Planning (II)	Children pick up the ideas from drawing and put their ideas into text.	Drawing
Elaborate My Ideas	Planning (III)	Children learn how to use bubble map to generate ideas.	Bubble Map
I Can Write	Self-Monitoring and Controlling	Children aware the importance of self-monitoring. Children create their Early Writing Rules in classroom.	Early Writing Rules: Legible Handwriting etc.
Work Place	Self-Control: Environmental Controlling	Children learn how to choose and restructure own working place.	Classroom Guides for Writing
I Need Help	Self-Control: Seeking Social Help and Information	Children aware of social help available: peers, teachers /adults. Children learn how to use resources for writing.	Reading Materials/ Internet
I Can Do It	Self-Control: Managing Attention and Effort	Children aware the method how to control of distraction (e.g., negative thought, noise, temptation).	Quotes / Self-Talk
Checked!	Self-Reflection	Children learn about reflection during and after writing by using self-checklist.	Self-Checklist

Each of the intervention unit requires approximately 90 minutes to carry out the activities designed to achieve the training goal pre-set. For example, during the second lesson, children in experimental group were taught how to set goal for their writing task. A realistic goal will effectively direct the learning of the children. If the children set the goal too high, it will stress up the learning process. Therefore, participant teachers were requested and modelled how to use Goal Score Worksheet in setting goal. Children were taught how to set their own goal to improve their writing task in every lesson. They were guided how to set their goal by participant teachers according to their expectation, ability in writing, and the needs of the task environment. Along the intervention, children kept the Goal Score Worksheet till the end of intervention. The Goal Score Worksheets were used to monitor their progression in attaining goals from time to time. Below are the Goal Score Worksheets done by children during intervention from time to time.

The figure shows two handwritten Goal Score Worksheets. The left worksheet is titled 'My Baju Raya' and has a goal of 'Write 1 lines' and 'capital letter'. The right worksheet has a task 'I am ...' and several goals checked off, including 'Write legible handwriting - HW', 'Write correct punctuation and capital letter - PC', 'Write on the line - L', 'Write one/ two /three/ more ideas- Id 5', and 'Write words/ phrases/ sentences'. Both worksheets include teacher comments.

Figure 1. Using Goal Score Worksheet to Set Goal by One of the Child from Experimental Group During 2nd Lesson

During the ten sessions of SRL intervention, children were provided with sufficient opportunities and platform to exercise the strategies in every intervention sessions. Training and manual for SRL intervention (including theories, pedagogy, lesson plans, and teaching and learning materials) were provided to participant teachers.

## Results

Findings related to the level early writing performance and the use SRL strategies before and after intervention; effectiveness of SRL intervention and predictors for early writing performance are highlighted as below.

### The Level of Early Writing Performance Among Preschool Children Before and After Intervention

Generally, preschool children in this study acquired limited competencies in mechanical writing skills and less performed in conveying meaning before SRL intervention. The early writing performance level for experimental and control groups were lower than average,

Table 2. *Descriptive Statistics of Early Writing Performance for Both Experimental (N=37) and Control Groups (N = 38)*

	Group	Pre-Test			Post-Test		
		<i>M</i>	<i>SD</i>	<i>Mdn</i>	<i>M</i>	<i>SD</i>	<i>Mdn</i>
Content	Experimental	1.27	0.84	1.00	3.19	0.74	3.00
	Control	1.53	1.11	2.00	2.29	0.98	2.00
Mechanical Writing Skills	Experimental	7.30	4.63	7.00	17.73	2.21	18.00
	Control	8.34	5.41	8.50	13.66	3.43	13.00
Overall Quality	Experimental	1.19	1.05	1.00	3.22	1.08	3.00
	Control	1.34	1.00	1.24	2.05	1.06	2.00
Total	Experimental	9.76	6.29	10.00	24.14	3.68	24.00
	Control	11.21	7.55	11.50	18.00	5.062	17.50

including all the aspects tested for early writing performance. The mean score of total early writing performance for experimental group ( $M = 9.76$ ,  $SD = 6.29$ ) and control group ( $M = 11.21$ ,  $SD = 7.55$ ) were lower than average, including all the aspects testing early writing performance. For example, according to Table 2, experimental group scored 7.3 out of 20 while control group scored 8.34 out of 20 in terms of mechanical writing skills.

Before intervention, most of the preschool children were less performed in mechanical writing skills and unlikely to express their ideas explicitly and effectively. Some of them were only able to express one or two ideas, but not in elaborating manners. This can be observed from the writing samples below.

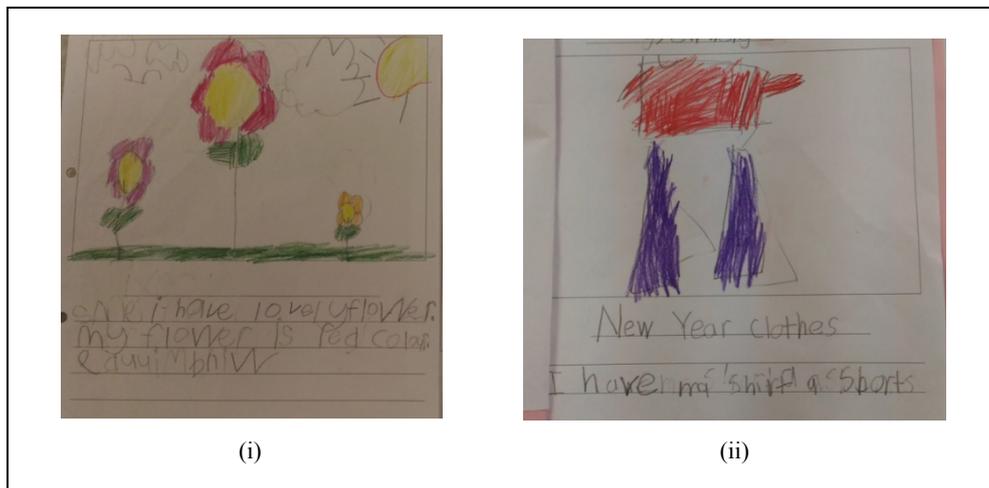


Figure 2. Samples of Written Text Among Preschool Children Before Intervention

Figure 2 (i) and (ii) showed that the child wrote two ideas about “Lovely Flower” and “New Year Clothes.” However, the child was only able to narrate the ideas, but not elaborate them. The written texts also showed that these preschool children in this study were lacking of mechanical writing skills such as capitalization, formation of letters, etc. After intervention, it was found that experimental group increased their early writing performance to high level during post-test and this can be seen from the Figure 3 below.

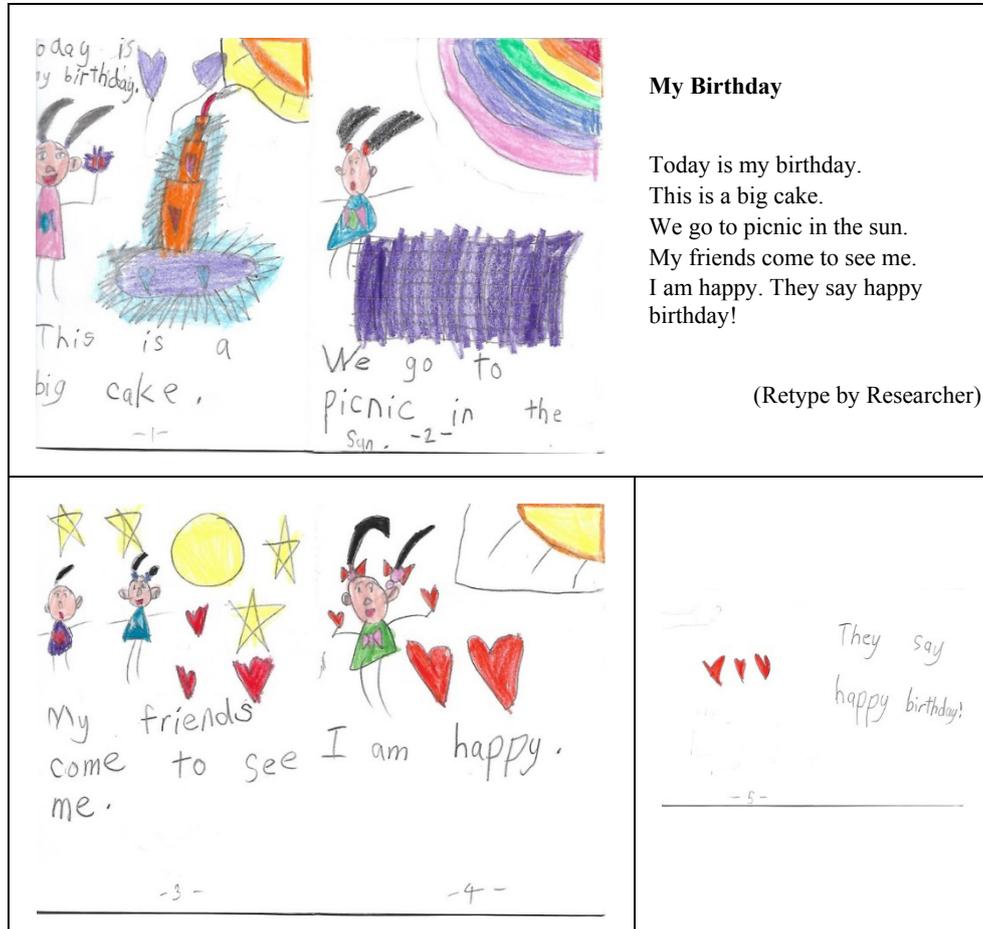


Figure 3. Random Samples of Written Text by Child A from Experimental Group After SRL Intervention

For example, in Figure 3, it was found that Child A was able to narrate her birthday celebration going for a picnic with her friends. She was able to write her story opening and ending with integrating the colourful pictures she drew.

Figure 4 above shows that Child B was able to describe her experiences and feeling during Children's Day. She was able to share her feeling such as excited and happy in the story she wrote. Child C was writing about his favourite fruits, which are *Durian* and *Rambutan*. He wrote facts about *Durian*, "thorny and rough." Both of Child B and C showed their competencies in the using invented spelling before getting towards conventional writing.

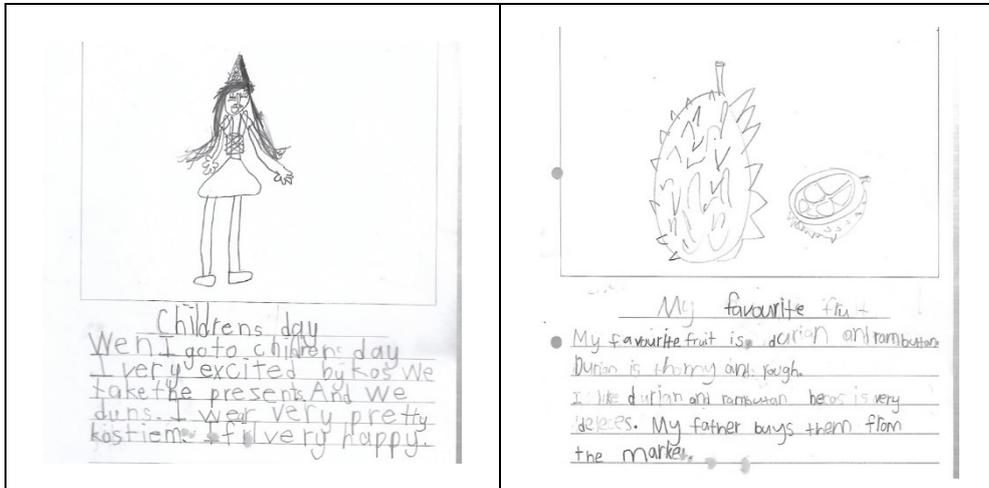


Figure 4. "Children's Day" by Child B and "My Favourite Fruit" by Child C

From the three examples (Child A, B, C), it was found that experimental group's children were able to express their ideas more effectively and creatively related to the topic chosen, with good mechanical writing skills after intervention. The texts produced were longer and more comprehensive. Despite of the spelling and grammatical errors, the stories produced were found more interesting and comprehensive in terms of expression of ideas.

#### **The Use of SRL Strategies Among Preschool Children Before and After Intervention**

There were five domains of SRL taught and tested in this study, namely planning and goal setting, task strategies, self-monitoring and controlling, environmental controlling and self-evaluation. Self-regulated Learning Strategies for Early Writing Observation Form (SRSREWOF) generated a profile with five domains' scores and an overall score for the use of self-regulated learning strategies in early writing. These five domains were scaled in a positive weight in which a higher score indicated a higher usage of SRL strategies. Scoring of the SRSEWOF involved summing the scores and total scores range from 26 to 104, with higher scores representing higher levels of the use of SRL strategies. For statistical analysis, this study categorized the level of the use of SRL strategies into three categories, which were high (78-104), moderate (53-78), and low (26-52). Table 3 below shows the level of each strategy engaged by both of the experimental and control groups.

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Table 3. Use of Self-Regulated Learning Strategies for Both Experimental (N = 37) and Control (N = 38) Groups During Post-Test

SRL Strategies	Level	Score	Experimental (%)		Control (%)	
			Before	After	Before	After
Planning & Goal Setting	High	25-32	16.2	64.9	15.8	23.7
	Moderate	17-24	21.6	27.0	31.6	57.9
	Low	8-16	62.2	8.1	52.6	18.4
Task Strategies	High	10-12	5.40	35.1	0.0	13.2
	Moderate	7-9	10.8	48.6	10.5	42.1
	Low	3-6	83.8	16.2	89.5	44.7
Self-Monitoring & Controlling	High	25-32	13.5	48.6	10.5	5.3
	Moderate	17-24	32.5	45.9	44.7	84.2
	Low	8-16	54.1	5.4	44.7	10.5
Environmental Controlling	High	13-16	2.7	0	0.0	2.6
	Moderate	9-12	13.5	37.8	36.8	63.2
	Low	4-8	83.8	62.2	63.2	34.2
Self-Evaluation	High	10-12	8.1	40.5	0.0	18.4
	Moderate	7-9	8.1	40.5	15.8	31.6
	Low	3-6	83.3	18.9	84.2	50.0
Overall Score	High	78-104	10.8	43.2	5.3	15.8
	Moderate	53-78	24.3	51.4	36.8	68.4
	Low	26-52	64.9	5.4	57.9	15.8

Table 3 shows that both groups were found lacking in employing SRL strategies and engaging at low level for all the five domains of SRL strategies before the intervention. After intervention, it was found that experimental group had increased the use of SRL strategies in early writing during post-test. Majority of the children from experimental group (51.4%) were at moderate level for their overall score in SRL strategies used. They employed SRL strategies such as planning and goal setting, self-monitoring and controlling, and self-evaluation strategies at high level. The different percentage of the use of SRL strategies at high level between two groups was 27.4%. This implied that the intervention imparted the knowledge and the skills in using related strategies for early writing. However,

the percentage of engagement at high level for environmental controlling among experimental group was decreased compared to pre-test. This result informed that after undergoing the intervention, children from experimental group did not appear to engage environmental controlling strategies frequently.

### Effects of SRL Intervention on Early Writing Performance

To prove the effectiveness of SRL intervention on early writing performance, pre-test and post-test were conducted. Both of the experimental and control groups' children were required to write about "Lovely Flower" during the pre-test and "A Special Day" during post-test. The written texts were scored by the two independent raters by using EWPS which was developed in this study. Two-way repeated measure ANCOVA was applied to assess all the scores for three aspects: content, mechanical writing skills, and overall quality, together with the total performance in early writing performance between groups and tests.

Table 4. *Summary of Repeated Measure ANCOVA for Early Writing Performance*

Source of Variation		Df	MS	F	p-Value	$\eta^2$
Test	Content	1	0.343	1.197	0.278	0.016
	Mechanical Writing Skills	1	2.568	0.919	0.340	0.013
	Overall Quality	1	1.969	5.613	0.020	0.072
	Total Performance	1	12.900	2.693	0.105	0.036
Test * Group	Content	1	12.355	43.063	<0.001*	0.374
	Mechanical Writing Skills	1	240.465	86.091	<0.001*	0.545
	Overall Quality	1	16.123	45.973	<0.001*	0.390
	Total Performance	1	530.711	110.801	<0.001*	0.606

\* Significant at  $p < 0.005$

According to Table 4, the findings for interaction between Test and Group for Content was statistically significant ( $F_{(1, 72)} = 43.063$ ;  $p < 0.001$ ,  $\eta^2 = 0.374$ ). In terms of Mechanical Writing Skills, a statistically significance for the interaction between Test and Group ( $F_{(1, 72)}$

= 86.091;  $p < 0.001$ ,  $\eta^2 = 0.545$ ) was found. Besides, the results also indicated a statistically significance for the interaction between Test and Group for Overall Quality ( $F_{(1, 72)} = 45.973$ ;  $p < 0.001$ ,  $\eta^2 = 0.390$ ). These results indicated that the interaction between Test and Group for total performance was statistically significant ( $F_{(1, 72)} = 110.801$ ;  $p < 0.001$ ,  $\eta^2 = 0.606$ ). These results indicated that SRL intervention impacted all the aspect in early writing performance and total performance among the preschool children in experimental group. The effect size (2.48) for the interaction effect in total early writing performance was considered high with Cohen's d value ( $\eta^2 = 0.606$ ), which suggested a high practical significance.

### Predictors for Early Writing Performance

The linear regression model confirmed a significant regression equation for planning and goal setting ( $F_{(5, 69)} = 12.706$ ,  $p < 0.001$ ), with an adjusted  $R^2$  (0.442) (see Table 5). Standardized beta ( $\beta = 0.652$ ) also indicated a positive and close relationship between planning and goal setting and early writing performance. The result indicated the high probability of getting better early writing performance by engaging more planning and goal setting strategy.

Table 5. *Standard Multiple Regression Analysis in Predicting Early Writing Performance*

Variables	Regression Coefficients			
	B	SE <sub>B</sub>	$\beta$	<i>p-value</i>
Planning & Goal Setting	5.635	1.874	0.652*	<0.001
Task Strategies	-0.573	1.373	-0.055	0.680
Self-Monitoring & Controlling	0.939	1.590	0.092	0.560
Environmental Controlling	0.368	1.446	0.030	0.800
Self-Evaluation	-0.221	1.741	-0.021	0.890
<i>Adjusted R<sup>2</sup> = 0.442</i>				
<i>F = 12.706, p &lt; 0.001</i>				

### SRL Strategies Mostly Employed Pertaining to Different Contexts

Eight children from experimental group were interviewed and observed in this study. The observation and interview data provided this study with rich information on how children used these strategies in their writing tasks within different contexts. There were eleven strategies emerged from the data, namely planning, goal setting, keeping records, self-monitoring writing process, seeking social help, seeking information, effort management, self-consequences, environmental controlling, and memorizing and self-evaluation. The percentage of strategies suggested to be used in different contexts was calculated and shown in Table 6 as below.

Table 6. *Summary of the Use SRL Strategies During Early Writing*

Context	Self-Regulated Learning Strategies
Assume your teacher discussed about a topic about “sport day” with your class. You will have to write about it. Do you have a method to help you to remember what was discussed in class?	Keeping Records (50%) Memorizing (37.5%)
If teacher ask you to write a short story about “My family” at home. How do you write? Do you have any particular method to help you plan and write at home?	Effort Management (67.5%) Seeking Information (50%) Seeking Social Help (50%) Planning (37.5%) Memorizing (25%) Goal Setting (12.5%)
Do you have any special method that you always use to complete your writing task in class?	Planning (87.5%) Self-Monitoring Writing Process (50%) Goal Setting (37.5%) Self-Evaluation (37.5%) Seeking Information (37.5%)
Sometimes our friends are playing, reading other books, talking or running around...Do you have any special method to motivate yourself to complete your work under these conditions?	Effort Management (100%) Environmental Controlling (50%) Self-Consequences (37.5%)
How do you make sure your writing is always the best?	Self-Evaluation (100%) Planning (62.5%) Goal Setting (37.5%) Self-Monitoring Writing Rules (25%) Seeking Social Help (25%)

The findings resulting from the interviews sessions show that children use different strategies pertaining to different contexts. From the interview data (see Table 6), it was revealed that goal setting and planning were the mostly employed strategies pertaining to different contexts. For example, LG told the interviewer that, in order to complete his writing task, he will think first before writing. After that, he put his ideas into picture, "*I use my brain to think first... Then, I draw the picture... what I want to write...*" In another example by IM, in order to produce good writing, he said he thinks what he needs to do. Then, he draws the picture and writes the notes, "*I think 100%. Then, I plan my ideas. I draw them out quickly and... sometimes I put some words first... I have to think and plan nicely. Then, I can write my story nicely...*" These responses support the finding that indicated planning and goal setting as the predictor for early writing performance.

All children mentioned that they engaged in controlling their effort, focus, and attention (100%) in their task and it was important to make sure they can complete their work, especially in poorly motivated environment. All children (100%) also commented that self-evaluation is important for them to assure good writing and write better. These findings indicated that children applied certain strategies in certain context. For example, engaging in seeking information and seeking social help were mostly suggested for completing task at home. Self-evaluation was mostly used to help them in completing task at school and assuring the quality of writing.

SRL is a personal process and a passionate learning approach. It allows learners to learn according to their own ability and unique learning needs. When children planned their targeted goal according to their abilities and learning resources they have in hand, they feel more confident and willingly to write. Interview data revealed the reality that children experience and further explained the results produced by the quantitative data.

## **Discussion**

### **Effectiveness of SRL Intervention on Early Writing Performance**

This study found that preschool children were at low level of early writing performance

during pre-test; they were lacking of ideas and mechanical writing skills to produce good writing. Therefore, the overall quality of their writing was at low level. With SRL intervention, the experimental group achieved a substantial increasing in early writing performance. The effect of SRL intervention on early writing performance was two times bigger than the instruction without intervention. The Cohen's effect size value ( $d = 2.19$ ) suggested a high practical significance for SRL. Therefore, this study indicates the possibility of improving early writing performance of preschool school children with appropriate instruction which includes teaching children how to generate and plan ideas, monitor and evaluate their writing, and effectively enhance early writing performance among preschool children (Graham, Gillespie, & McKeown, 2013; Limpo & Alves, 2013; Puranik et al., 2014). These results were in line with the suggestions of the studies with different context which identified the contribution of SRL strategies in writing performance (Graham et al., 2013; Limpo & Alves, 2013; Olinghouse & Graham, 2009; Zimmerman & Risemberg, 1997). When the children are equipped with SRL strategies, they become confident, independent, and autonomous writers as self-regulated learners are metacognitively, behaviourally, and motivationally active in their learning processes (Zimmerman, 2000, 2013). Hence, with the SRL, better quality writing and higher performance in early writing can be expected from children. This finding adds to a growing body of literature, showing that self-regulatory instructional approach has shown strong impact on preschool children's proficiency in expressing ideas by written text such as symbols, signs, words, or sentences over time in Malaysia.

### **The Use of SRL Strategies**

This study provided the evidences that confirmed that preschool children were able to learn and engage with SRL strategies and the SRL skills can be enhanced with appropriate instruction, learning activities, pedagogical practices, and classroom environments (English & Kitsantas, 2013; Pino-Pasternak et al., 2014; Whitebread & Basilio, 2012; Whitebread & Coltman, 2010). This study showed that the use of SRL strategies among preschool children was at moderate level before the intervention. Although the overall mean score of SRL strategies for both groups was increased across the time, the result further confirmed

that there was a significant difference between experimental group and control group after intervention. It proved that preschool children in this study were able to learn and engage with SRL strategies with appropriate instruction. The findings challenged the past viewpoints that have affirmed that young children cannot self-regulate their learning in meaningful ways (Flavell, Green, Flavell, Harris, & Astington, 1995; Paris & Newman, 1990). The identification of observable behaviours and engagement of SRL strategies in this study strongly supported recent research findings which claimed that children are capable of performing metacognitive and self-regulatory skills if learning activities, pedagogical practices, and classroom environments are supporting SRL (Pino-Pasternak et al., 2014; Whitebread & Basilio, 2012; Whitebread & Coltman, 2010). The findings in this study presents an urge for pursuing extra research to seek for further understanding self-regulatory abilities of young children and effective ways of fostering young children's development of self-regulatory capabilities in various contexts, including at home.

### **Predictors for Early Writing Performance**

This study found positive correlations between three types of SRL strategies with the early writing performance, namely: planning and goal setting ( $p < 0.001$ ), self-monitoring and controlling ( $p < 0.001$ ), and self-evaluation ( $p < 0.001$ ). These results implied that children who engaged more in these SRL strategies tend to have higher performance in early writing. These findings were consistent with the theories and studies which suggested that strategic self-regulated learners take on their responsibility by planning, setting goals, and monitoring their progress towards learning goals. Besides, they also must assume ownership for their learning and achievement outcomes (Diamond, 2016; Limpo, Alves, & Fidalgo, 2014; Zimmerman & Schunk, 2012).

Regression analysis confirmed planning and goal setting as significant predictor for early writing performance in this study. The finding fits into the cognitive writing model which stated that writing is a goal-directed activity (Costa et al., 2017; Hayes, 2012). According to cognitive writing model, goals are guiding the writers throughout the writing process and self-regulated writers will assess or evaluate their personal achievements related to the expected goals as well as the strategies used in their writing task (Hayes & Olinghouse,

2015). In addition, this finding was also parallel with some studies which provide strong support for the association between planning with writing quality among the lower grade children (Graham, McKeown, Kiuahara, & Harris, 2012; Olinghouse & Graham, 2009). According to the previous studies, when children engaged with planning and goal setting, they tend to be more conscious in understanding their task requirement and planning their learning outcomes. Through these strategies, they created better learning habits in goal setting and planning their writing and, thus, enhanced their writing performance (Dent & Koenka, 2016; Graham et al., 2012; Limpo & Alves, 2013). In this current study, it was found that providing children with planning and goal setting strategy, children learnt how to plan their writing by choosing related topic and generated more ideas through drawing, bubble map, and wh-questions. They were found able to produce more ideas, longer text, and better quality of the writing.

There were some notable findings found in study such as negative correlations between task strategies, self-evaluation, and early writing performance. Preschool children in this study were found less engaged with task strategies which include memorizing, recalling, or rehearsing and self-evaluation. This finding was contrasting with the previous studies which claimed that self-evaluation or revising text impacted the early writing performance (Limpo & Alves, 2013). In contrast, the interview data of the out-performing participant children revealed that self-evaluation was important for them to make sure their writing was always the best. They claimed that they self-evaluated and refined their work in order to produce interesting and good story. This unclear finding might due to the difficulty in identifying self-evaluation behaviours among preschool children during early writing intervention by using SRSEWOF.

## **Conclusion**

Early writing is one of the important components in early literacy and writing itself is an important tool to gather and convey information in the learning process (Graham et al., 2013; Puranik et al., 2014). Although preschool children in Malaysia were lacked of mechanical writing skills and less presenting their ideas effectively, early writing

performance of experimental group was increased to high level after intervention. Previous studies suggested that prior to starting the writing process, good writers plan, set goals, and use knowledge specific to the writing task in hand to produce quality writing (Limpo et al., 2014). This suggestion was proven in this study where SRL intervention on early writing performance was two times bigger than the instruction without intervention. Therefore, teaching SRL strategies to children can help them to be equipped with strategies to instil positive attitude to perform better in their writing tasks. The main findings of the current study showed that planning and goal setting and self-evaluation were key SRL strategies for preschool children in their learning process. Future studies need to include more intervention studies with rigorous treatment fidelity control and provide more empirical evidence to compare the different effects of SRL for young children's learning.

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